FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

WE cannot say we are deeply impressed by the latest scheme propounded by Mr. Pemberton-Billing, that of the "Council of Nine." The idea seems to be to form a new political Party, to be known as the "Vigilants," who are to police the House of Commons—whatever that may mean. As explained by Mr. Pemberton-Billing, before anyone can enrol himself in this *corps d'elite* he must make oath to :—

The Council of Nine.

1. To do all in his power to promote the creation of an efficient Imperial air service worthy of the Empire.

2. To watch and maintain a public against the political interests.

3. Never to place himself under any obligation to the Government or any party.

4. Never to vote on or support any legislative measure to the advantage of any trade or commercial undertaking in which he had any interests, or from which he might derive any profits.

5. Never to accept from the Government any honour, office or title.

Acting apparently on the principle that no contract is enforceable unless it contains a penalty clause, the parties to the "Vigilants'" oath are to bind themselves to pay the trifling sum of £5,000 in case of any breach of the articles of association, as we suppose we must call the document to which each member is required to set his hand. The ultimate scheme seems to be to form an association with a membership of 50,000, with a fighting fund of £25,000, to contest elections until such time as the whole of the intrepid nine have become fully fledged Members of Parliament. The rank and file of the new Party are not to get off with the mere honour and glory of belonging to it—they are to be asked to pay 1s. on entry and a further 1s. per election to assist in keeping the good work going. Once the Council of Nine has been properly established and each of its members has succeeded in qualifying for a Parliamentary salary of £400 per annum, each of them is to devote himself to acquiring a thorough understanding of the working of one of the Departments of State and to make its lapses from the paths of political rectitude his own especial affair. And so that a harassed administration may not be allowed to sink into lassitude, the devoted Nine are to more or less engage themselves to ask never less than eight questions a day, move the adjournment, or talk out the business before the House in order that matters in which they are interested may be brought forward and properly considered.

Unquestionably, Mr. Pemberton-Billing has done a great deal of very excellent work since he entered Parliament, work the value of which would have been vastly enhanced had it not been for the irresponsibility of his methods and an unfortunate habit of "getting on the nerves" of the spokesmen of the Government. We know as well as most that it must be very difficult to sit down under the sort of evasion which was at the root of the regrettable *fracas* in which Mr. Pemberton-Billing figured last week. There is little doubt that there was somewhere an intent to deceive the House and the country in the answer given to the question as to whether the train that conveyed Princess Mary to Southend recently was escorted by aeroplanes or not. But Mr. Pemberton-Billing was not justified in stating that the Under-Secretary for War had been lied to by the officers from whom he had his information—he should have known the temper of Parliament well enough by this time to have kept clear of such a *faux pas*. As a matter of fact, we had intended to have left the incident unnoticed, but it is too recent and withal so indicative of the reasons for Mr. Pemberton-Billing's

failure as a parliamentarian that we can scarcely avoid passing mention of it to point the moral that, even if such a party as the "Vigilants" were necessary at the present juncture, he is scarcely the one to initiate and lead it. He had a chance which is given to few to have really left his mark on public life. He has missed it, and it will take more than the bare bones of a proposal such as the one under discussion to bring back the lost opportunity. In any case, we do not think the proposition as it stands is a sound one. So far as it is possible to discern, it is one for the formation of an obstructionist party almost pure and simple—a party which would, if given its head, soon reduce Parliamentary procedure to a species of *opera bouffe*. Heaven knows, we need drastic reforms in the present method of conducting the business of the House of Commons, and in politics generally, but we do not think they are to be found in the gospel as expounded by Mr. Pemberton-Billing.

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Damage by Friendly Aircraft.

An important and interesting point has been raised by Mr. Alfred Mansell of Shrewsbury in the *Times*, in relation to compensation for damage caused by friendly aircraft. The point itself is covered by the letter which we quote below, and in which the writer says :—

"I have recently had an interview with an officer acting for the military authorities on the question of damage caused by aeroplanes deliberately using land on several days for alighting or resting purposes (in some cases occupying the land over the night) without the consent of the owner or tenant, and without any warning, with the result that the tenant has suffered considerable consequential loss. The officer at the outset quite frankly informed me that the military authorities, presumably acting under certain powers, do not recognise any responsibility for damage by aeroplanes, no matter how serious the loss may be to the owner or occupier, or both, and that the loss should be covered by insurance . . . I am satisfied that there is not one farmer in a thousand insures against this loss or has any idea that it is necessary for him to do so.

"Take the position of a farmer who has the misfortune for an aeroplane to fall in a 30-acre field of grain or potatoes. The field is overrun by sightseers and the crop is completely lost, and unless the farmer is insured he gets nothing, except by an act of grace on the part of the military authorities. It is high time this matter should be dealt with on business lines."

The whole question of aircraft insurance is one in which "Flight" has interested itself since the very outset of the war, and in which it may with justice claim to have taken the lead. The point here raised, though, is one that is new. To our way of thinking there should be no two opinions about such damage as the *Times* discusses—it should be made a national liability and compensated as such without any obligation for the individual to insure against it. We fail to see wherein lies any difference between damage done by troops to growing crops or fences, for which compensation is paid to the owner, and similar damage caused by the alighting of aircraft on the same land. In the one case, an officer is specially detailed to assess and agree the amount to be paid for the damage, and in the other it appears that the military authorities disclaim all liability. Certainly where the State does something in the name of the whole community, it is the community which should be held liable for all the consequences of the act, none of which should be allowed to fall on the individual. That is but common justice and equity, and we imagine that an action at common law would establish the principle. However that may be, it seems to us quite clear that the matter is not at all one for insurance, but for compensation. The *Times* appears to be inclined to the opinion that the risk is one which should be brought within the four corners of the Government insurance scheme. We strongly dissent from that view, for the reasons we have given.

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Building Obsolete Machines.

Arising out of the correspondence to which we referred last week, in which numerous correspondents of the *Evening Standard* allege that the output of aircraft is being seriously curtailed by the holding up of essential machinery, our contemporary returns to the charge with a statement made by another correspondent, who says that his firm is now actually delivering and being paid for machines that are obsolete and which will never be flown. He says his firm is working on a contract 18 months old. Their instructions were that a very large number of machines would be required at a time, and his firm was told to procure spare parts for the whole contract right away and to concentrate on the necessary wood lengths. Realising some time ago that their labour was in vain, the firm urged the Government to recoup them for out-of-pocket expenses and give orders to scrap the material on hand. "The suggestion was ignored and the firm is to-day hard at work delivering and receiving payment for machines that are absolutely obsolete."

We are bound to assume the truth of this only too categorical statement of fact. That being so, the first question that again occurs is : Who is to hang for it ? Of course, the answer to that is that a Government which is bent on shielding and whitewashing the Mesopotamia culprits is not likely to take any serious notice of such a mere amateur in ineptitude as the department or the individual responsible for such a minor affair as this. The charge is one that has been made in general terms on many occasions, but we do not recollect such a specific case as this for a very long time. In fact, we had hoped that the agitation, in which we ourselves took part long months ago, had had the effect of stopping the stupidly inept policy of building machines which are of no earthly use for the purposes of the war. We are fully appreciative of the fact that as fighting aircraft develop, as they do from day to day, a certain amount of overlapping of construction is unavoidable. It is quite impossible to instantly put the knife through all construction because even a vital improvement has been made or a new discovery achieved. Therefore, we have not in the past spoken with the same amount of freedom as some who have apparently overlooked the conditions governing manufacture on a large scale. But in the case under notice there is absolutely no excuse to be made for the people who are responsible. Here is a definite case of a contract a year and a half old, for machines which are utterly useless. The department concerned is asked to do what "Flight" has many times pointed out as the only proper course to be adopted—to pay the contractor out-of-pocket expenses and scrap the contract. In the words of the person making the allegation, the suggestion is ignored and work proceeds and is proceeding to this day on machines which will never go into the air—and the most probable explanation of it all is that the matter is in the hands of some official who is too slack or too lazy

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SAVING A CARGO STEAMER IN THE MEDITERRANEAN.—An incident in which a French pilot on an F.B.A. bombed a German submarine and saved a tramp steamer.

to give it his attention. The statement has been made, very definitely made, in the columns of a responsible newspaper, so that it should be the easiest thing in the world to run the whole matter to earth, and if Lord Cowdray is the man we take him to be, he will make it his personal and individual business so to trace it out and see that whoever is responsible does not get another chance of holding up the production of *efficient* aeroplanes. It is simply appalling that, with the fourth year of the war dawning, such things as this can happen. Here we are being told by the Minister of Munitions that in order to achieve the necessary output of aircraft we require the whole of our own production of alloy steels, the whole American supply of spruce, all the mahogany produced by Honduras and almost the world's supply of flax, yet we hear of precious material being squandered in this manner as a result of simple inefficiency—if it is nothing worse—on the part of officials. Really, when these things come to light it is difficult to be satisfied that it is only slackness and inefficiency that are behind it. We should be sorry if *nous sommes trahis* had to be said in connection with these matters, but if much more of the same sort of thing should come to light, people can hardly be blamed for raising the cry that ran through France in 1870. The officials responsible will only have themselves to blame if something blacker than ineptitude is laid to their charge.

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Civilian Recruiting Boards.

The decision of the Government to transfer the business of recruiting from the War Office to civilian authorities is one of a most far-reaching character, and, provided the new authority is invested with a proper amount of discretion, the change should be good. There are two sides to this recruiting question. On the one hand, the army wants men, and we agree it must have them. On the other, the industries of the country also require men, and unless these are within limits available business must be closed down altogether.

Now, the war is costing the country nearly £8,000,000 sterling per day. That amount of money has got to be found somewhere, and it can only come from our trades and industries, and it is quite manifest that when these have been closed down there will be no money to pay for the war. The weakness of placing the recruiting of men for the army in the hands of the War Office is that the military authorities have nothing whatever to do with paying for the war. Their business is to spend the money when it has been voted, and so long as they get the men they have no concern with what damage they are doing to the country's vital interests in another direction. Of course, they *have* a concern in the matter, but it is an indirect one and quite subsidiary in their eyes to the primary consideration of keeping the field armies up to strength. They have got into the habit of thinking that all they have to do is to say that they want another 1,000,000 or so men, and they can have them by the simple process of taking them, without regard to any other considerations whatever. Let us say that we do not blame the recruiting authorities overmuch.

It is the system that is at fault. It seems to us that we have arrived at a stage of the war when we have to calmly and soberly sit down and think out whither we are going and whether we are not trying to do too much. We have maintained since the outbreak of war, and for years before the war, the greatest navy the world has ever seen. We have raised and equipped the second largest army in the world—even if we have not actually *the* largest. We are paying not only our own bill, but are substantially assisting with money every one of our Allies. It seems quite clear that we cannot continue thus indefinitely. We can do two of these things quite reasonably well, but we cannot do them all, and there must be retrenchment before long in either man-power or money. It is axiomatic that you cannot have your cake and eat it as well, but that is exactly what the Government is trying to do, and until the policy is modified it does not seem to matter very much who controls recruiting—the War Office or the Local Government Board. But if the new régime is to work on a different principle, and is to supply the Army on a basis that the latter is to have the men if they can be obtained without completely dislocating the business of the country on which we are relying to pay the bill, well and good. Alternatively, if the Government has made up its mind that at all costs we must keep up the supply of men, again well and good, except that it is quite impossible for us to go on any longer financing the war at the present rate. We are out to win, but we confess we are unable to see how victory and national bankruptcy in men and resources are likely to benefit us much more than an "inconclusive peace." However, if it is quite impossible to win without incurring that bankruptcy, then let us win and be bankrupt, but we do not think we need go that far if the Government will clear its mind of the apparent obsession that the Empire is a bottomless reservoir of money and men.

There is another and an intensely important side to the change we are discussing, and that is the one concerned with the passing into the Army of the unfit. We confess we are not particularly sanguine about the working of the new scheme so far as this aspect of the matter is concerned. To our way of thinking, it will be better to suspend judgment until we see the composition of the new board. The ermine wears a dark coat in the summer and a white in the winter, but it is an ermine all the year round. To put the medical officers who have been responsible for the scandals of the boards into plain clothes and call them civilian doctors will not do away with the abuses, and if, as we hear is likely to be the case, the present recruiting staff of the War Office is to be largely drafted back to civil life to look after the interests of the Army, then we do not see where the improvement is likely to lie. As we have said, the real remedy for the whole thing is an immediate recognition of the fact that even the British Empire has a limit to its resources, and to take measures for working within that limit.

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The Industry and Discharged Soldiers and Sailors.

AT a meeting, on July 19th, of the "Central Committee for the Employment of Discharged Soldiers and Sailors connected with the Motor Industry," it was decided, in view of the great importance which the aviation industry has assumed, to enlarge the title, the final portion of which now reads "connected with the Motor and Aircraft Industries." We understand that during the past few weeks every man who has registered has been put into touch with at least one employer.

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HONOURS.

Honours for the R.F.C.

IT was announced in the *London Gazette* of July 26th that the King has been pleased to approve of the appointments of the following officers to be Companions of the Distinguished Service Order in recognition of their gallantry and devotion to duty in the field :—

2nd Lt. (Temp. Capt.) J. L. ANDREWS, M.C., R. Scots and R.F.C.—For conspicuous gallantry and devotion to duty in leading offensive patrols with great dash and success on over thirty occasions, and taking part in over twenty-two combats. His skill and courage in attacking and destroying hostile aircraft have at all times been magnificent.

2nd Lt. S. H. A. D'ARCY, R.F.C., S.R.—For conspicuous gallantry and devotion to duty, in continually attacking and dispersing hostile infantry and transport from a very low altitude. Whilst engaged in this he was wounded, but refused to return until he was almost unconscious. He also showed great courage and determination on several occasions in attacking hostile aircraft, destroying some and forcing others to descend.

The King has been pleased to award a Bar to the Military Cross to the following officers :—

Lt. (Temp. Capt.) W. V. STRUGNELL, M.C., Hamps. R. and R.F.C.—While leading an offensive patrol he attacked and brought down a hostile machine. Later, in the same patrol, he brought down a second machine. In all he has accounted for five machines and a kite balloon. (M.C. gazetted June 3rd, 1916.)

The King has been pleased to confer the Military Cross on the following officers in recognition of their gallantry and devotion to duty in the field :—

2nd Lt. (Temp. Lt.) R. S. AITKEN, R.G.A. and R.F.C.—On several occasions he made most valuable reconnaissances of the enemy's line, and on two successive days he engaged and severely damaged hostile batteries, working under most adverse weather conditions.

2nd Lt. V. H. BAKER, Gen. List and R.F.C.—In a large number of aerial combats he showed the greatest daring and determination. On one occasion alone, he flew at a low altitude over the enemy lines, attacking and dispersing enemy artillery, infantry and transport, and returned with a valuable reconnaissance report concerning the retiring enemy.

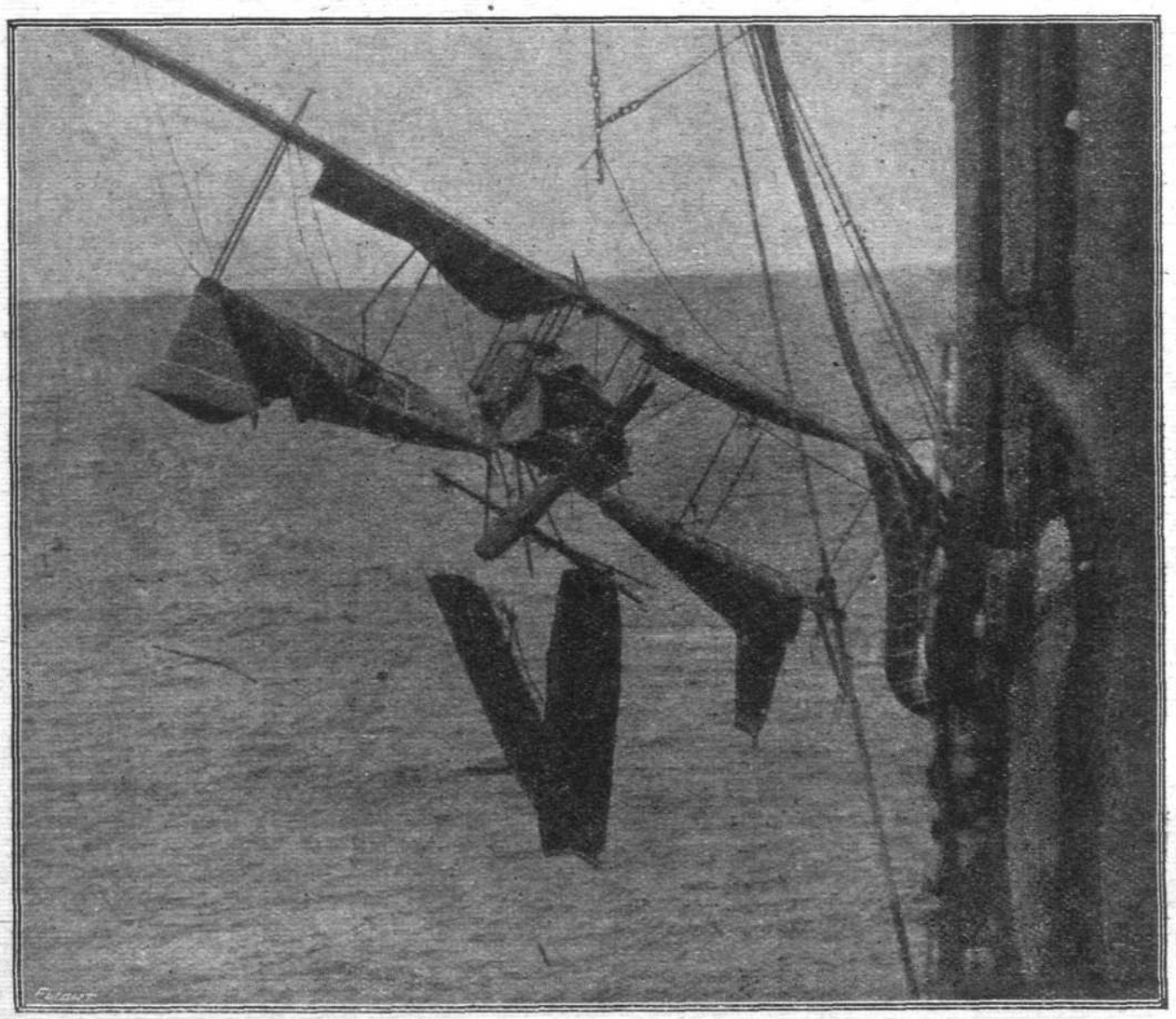
2nd Lt. G. N. BLENNERHASSETT, R. Ir. Fus., S.R., and R.F.C.—He has shown great skill and courage when acting as escort in attacking hostile formations. On one occasion he attacked two hostile machines, driving both down out of control. Later he forced three other machines down.

2nd Lt. H. BLOFELD, R.F.C., S.R.—For conspicuous gallantry and skill. Whilst registering a long-range gun, he was attacked by five Albatros scouts, and was severely wounded in several places, the observer being shot through the wrist. The petrol tank having been pierced, he flew back to his own aerodrome, and was unconscious when taken out. His courage and skill saved both their lives.

2nd Lt. (Temp. Lt.) J. E. S. P. BRADFORD, W. Rid. R. and R.F.C.—On three separate occasions his accurate information enabled our artillery to engage and destroy enemy guns and emplacements. He afterwards attacked and inflicted serious damage upon a hostile battery, using his machine gun from a very low altitude.

Temp. 2nd Lt. G. H. COCK, Gen. List and R.F.C.—On many occasions he showed great courage and determination in attacking and destroying hostile aircraft, and in dispersing hostile troops from a low altitude. His skill as a formation leader has set a fine example to the other pilots of his squadron.

2nd Lt. (Temp. Lt.) S. GAVIN, Devon. R. and R.F.C.—As observing officer in the artillery he showed great ability and conspicuous courage under shell fire. On two occasions he



Hoisting a seaplane on board after a "slight" mishap.

was compelled to parachute down from burning balloons, but this in no way lessened his enthusiasm. The loss of a foot necessitated his being sent home, and his valuable services have been greatly missed.

Temp. 2nd Lieut. A. E. GODFREY, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty in constantly attacking hostile machines at close range, regardless of personal risk or of their being in superior numbers.

Lt. R. B. HAY, W. York. R., S.R., and R.F.C.—On several occasions he has shown the utmost courage and dash in attacking and dispersing hostile aircraft in superior numbers. His willingness to undertake the most hazardous duties has at all times set a fine example to other pilots and observers of his squadron.

Temp. Lt. T. F. HAZELL, Gen. List and R.F.C.—On several occasions he displayed marked courage and determination in attacking and destroying hostile aircraft.

Temp. Lt. F. P. HOLLIDAY, Gen. List and R.F.C.—In company with another pilot he attacked five hostile aircraft, setting one on fire, driving down another out of control, and dispersing the remainder. He has previously done fine work, bringing down eight hostile machines in all.

2nd Lt. J. B. HOME-HAY, Arg. and Suth'd Highrs. and R.F.C.—He showed consistent ability and courage in observing for and ranging our artillery upon enemy guns and trenches. His accurate information was of the greatest value to our batteries.

Temp. 2nd Lt. G. KNIGHT, Gen. List and R.F.C.—He showed great dash and promptness in diving to the assistance of one of his squadron, who had been attacked by five hostile scouts and dispersing them. His assistance to our artillery in engaging hostile batteries from a low altitude was of the greatest value.

Lt. T. W. MCCONKEY, Can. Infy.—He was attacked by several hostile machines, and was wounded in three places. He continued to work his machine-gun, driving off the hostile machines. His coolness and determination undoubtedly saved his pilot and machine.

2nd Lt. M. L. MAGUIRE, Conn. Rang. and R.F.C.—With great courage and skill he attacked and completely destroyed an enemy aeroplane, which crashed to the ground from 4,000 ft.

Lt. A. E. PICKERING, Can. Infy. and R.F.C.—For conspicuous gallantry and devotion to duty when acting as observer, in making reconnaissances at very low altitudes, and attacking hostile infantry, transport and machines with great courage and determination. In conjunction with his pilot, he was instrumental in destroying several hostile machines, and in rendering valuable information to our artillery.

2nd Lt. (Temp. Capt.) R. G. H. PIXLEY, R.F.A. and R.F.C.—He attacked a hostile balloon with three other pilots, and, remaining after they had left, finally sent it down in flames. He has assisted in bringing down several hostile machines, and has done good work throughout.

2nd Lt. R. W. REID, R.F.C., S.R.—He has done fine work in taking aeroplane photographs. This work has been carried out while flying at very low altitudes and often under very heavy machine-gun fire.

Capt. (Temp. Major) A. J. L. SCOTT, Yeo. and R.F.C.—He has on several occasions attacked and destroyed enemy aircraft, and taken successful photographs under heavy fire. He has constantly shown the greatest courage in attacking numerous hostile machines single-handed, during which on two occasions his own machine was consideralby damaged. His great coolness, dash and resource have set an excellent example to his squadron.

Lt. (Temp. Capt.) J. G. SELBY, R.F.A. and R.F.C., S.R.—During a photographic reconnaissance he was attacked by five hostile scouts, whom he put to flight, continuing his work with complete success. He afterwards attacked and put to flight an enemy battery. His work at all times has been marked by the greatest courage and ability.

Lt. O. M. SUTTON, S. Lanc. R., S.R. and R.F.C.—On at least eight separate occasions he showed great determination in attacking hostile aircraft, destroying them or driving them down out of control, and he has also done very good work in other flights by preventing hostile aircraft from getting on the tails of other machines. On one occasion, though his gun jammed, he dived three times and drove off an enemy machine.

2nd Lt. P. G. TAYLOR, R.F.C., S.R.—He has taken part in over forty offensive patrols at low altitudes and under heavy fire from the ground. He has always shown exceptional dash and gallantry in attacking large formations of hostile machines, setting a very fine example to all his comrades.

2nd Lt. (Temp. Capt.) S. W. TAYLOR, R.F.C., S.R.—He has at all times shown the greatest fearlessness, especially in volunteering for any duty entailing special risk. His dash and determination in engaging hostile machine guns, transport and bodies of troops from a very low altitude have been most marked.

Temp. Lt. R. P. M. WHITHAM, North'd Fus. and R.F.C.—On four successive days he showed remarkable courage and ability in bombarding enemy positions, and, working in conjunction with our artillery, he rendered them most valuable information.

The King has been pleased to approve of the award of the Distinguished Conduct Medal to the following for acts of gallantry and devotion to duty in the field :—

8202 2nd Air-Mech. R. C. COOPER, R.F.C.

THE King has been pleased to award the Military Medal for bravery in the field to the following :—

6705 1st Air-Mech. T. REYNOLDS, R.F.C.

"Mentioned in Despatches."

IT was announced on July 27th, that the names of the following have been brought to the notice of the Secretary of State for War for distinguished services rendered in connection with the war :—

Major (Temp. Lt.-Col.) G. LIVINGSTONE, C.M.G., London and R.F.C.
Major and Bt. Lt.-Col. (Temp. Brig.-Gen.) J. M. SALMOND, C.M.G., D.S.O., R. Lancs. and R.F.C.
Capt. (Temp. Major) J. VALENTINE, R.F.C. (Spec. Res.).

Other Interesting Awards.

Although not given for actual flying work, the following awards of the Military Cross have been made for gallantry in connection with aircraft :—

Capt. A. B. CHAPMAN, Can. A.M.C.—One of our planes being shot down he went to the assistance. On his way he was wounded in the head. He continued on his way to the machine, which was being heavily shelled, attended to one of the occupants, and had him carried away.

Lt. F. A. FRASER, Infy.—When leading a patrol against the retreating enemy he got in touch with two R.F.C. officers who had been brought down in their machine, and drove off the enemy, who were moving forward to capture these officers. He set a fine example throughout.



The "Raid" on Paris.

IN the *communiqué* issued from Berlin on July 28th the following appeared :—

"Last night bombs were dropped upon the railway stations and military establishments of Paris. Hits on the objects aimed at were observed. Our airmen returned unharmed in spite of the strong defensive fire."

The following semi-official note was issued in Paris on July 29th :—

"The German official *communiqué* of July 28th asserted that German aviators bombed railway stations and military establishments in Paris on Friday night, and that certain of the projectiles hit their mark. This assertion is untrue. The attempted attack by enemy aeroplanes south of Paris caused no loss of life or material damage."

Some details of what happened are given by the *Journal* as follows :—

"Several bombs were dropped. One fell in a large store of combustibles, and another in a courtyard. Further on a bomb played havoc among a bed of cauliflowers, and another fell in the courtyard of a factory. Two others fell in a gutter. None of these bombs did much damage.

"Moving away from Paris, the aeroplane dropped more bombs in an important centre. One fell in a garden, and three others in a boulevard. One of these damaged the façade of a turret and exploded, slightly injuring a lady who was in bed in a neighbouring house. A little to the right of this centre three bombs fell in a large enclosure, and did no serious damage."

On the following evening another alarm was given, but the raiders were turned back before getting near Paris.

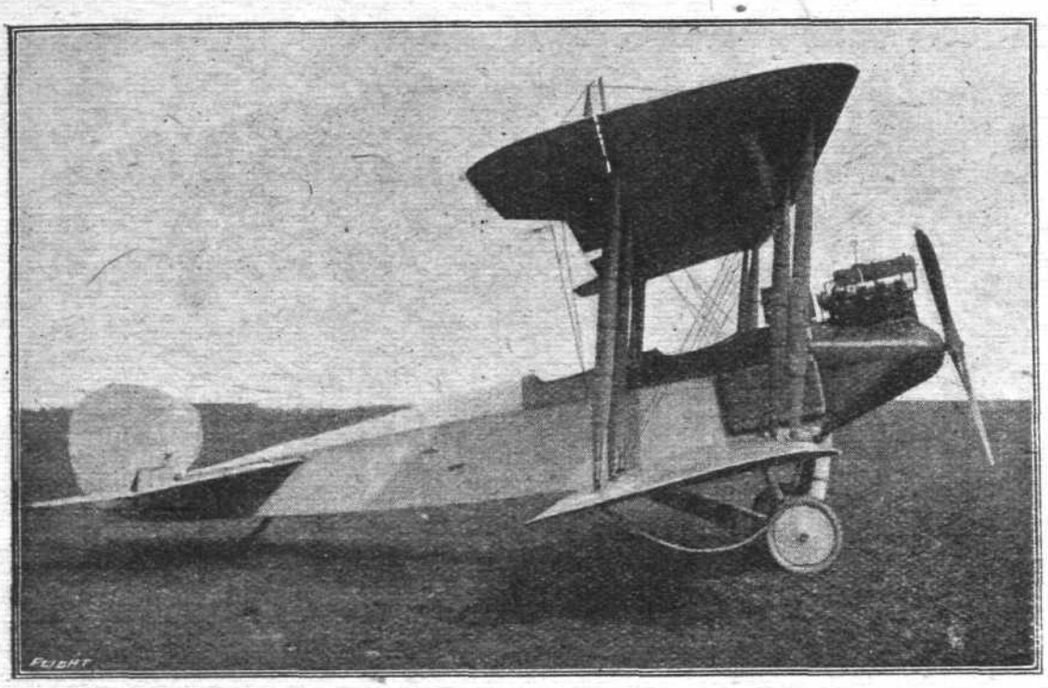
Germany Still Lying.

A SEMI-OFFICIAL message sent out from Berlin on July 24th, denies the report of the British Admiralty regarding the air raid on London on July 7th. The message says the raid was executed according to plan, and, despite anti-aircraft defences and hostile airmen, only one machine was lost, and it fell into the sea from an unknown cause and not through the enemy's fire.

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THE AEROMARINE TRAINING TRACTOR BIPLANES.

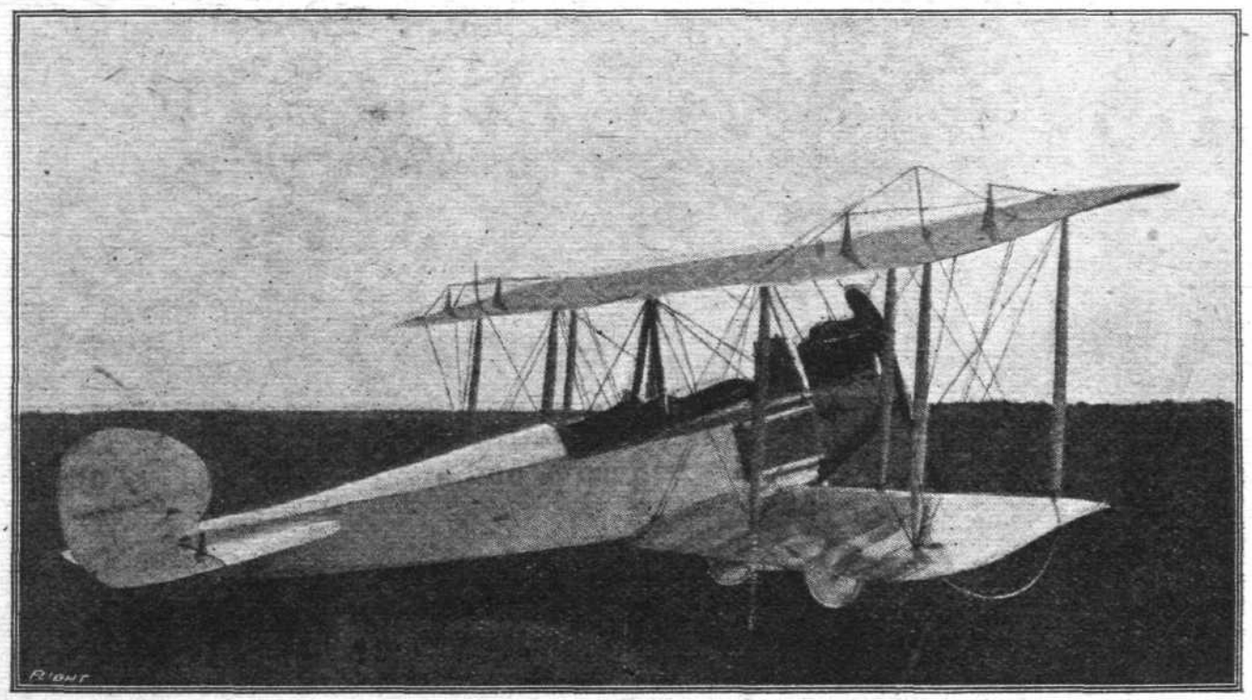
WHATEVER critics may have to say as regards American high-speed warplanes, it cannot be said that America has not produced some really good machines suitable for training, sporting and similar purposes. Most of the American aircraft firms have, in fact, each one or more designs of this type included in their range of models listed. There should, therefore, be plenty of machines available for the training of that "umpteen-thousand" aviators it is suggested to send over to Europe.



Side view of the Aeromarine training tractor biplane, land type.

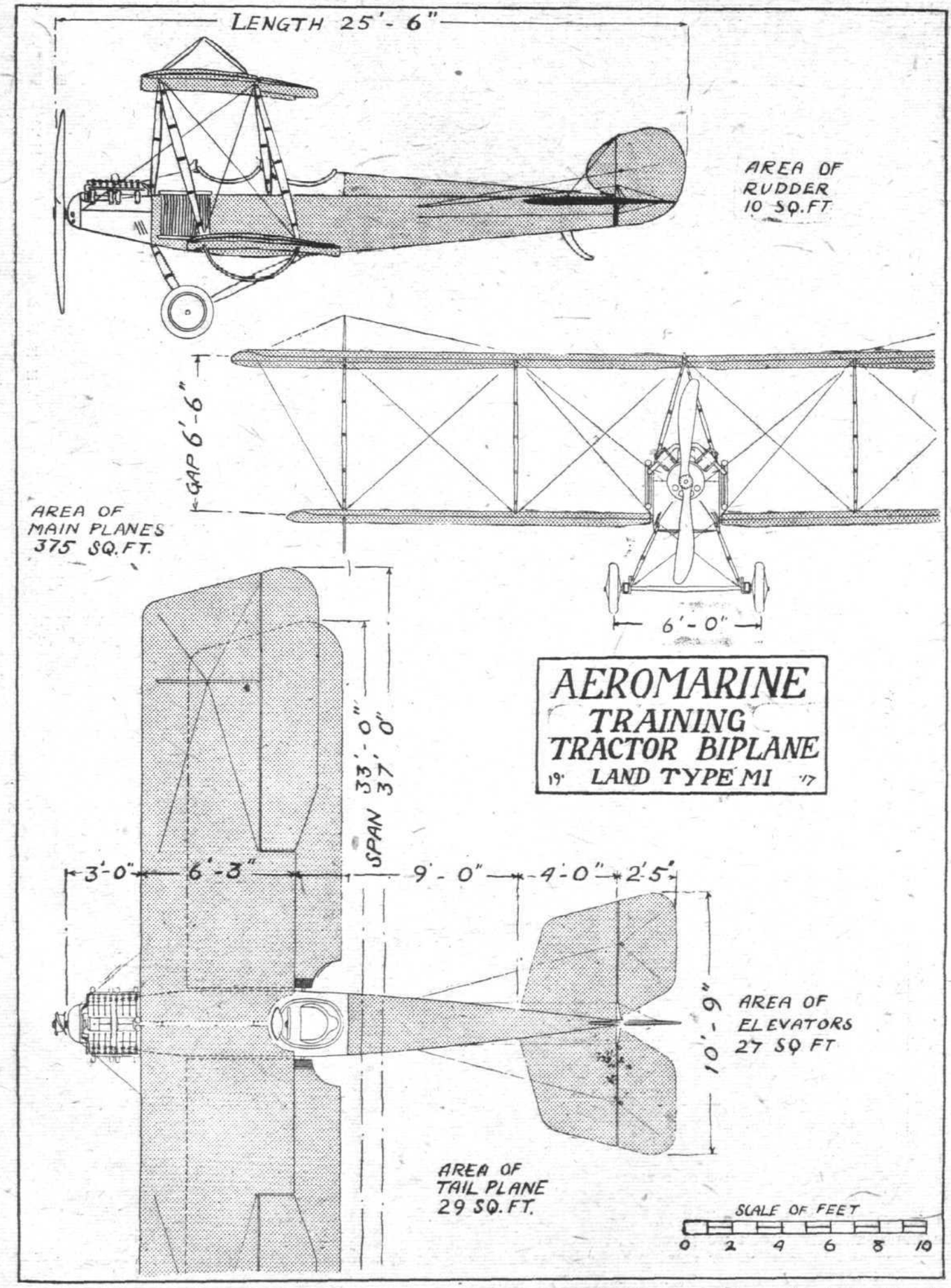
The other week we described the Burgess training machine, and this week we give particulars of the Aeromarine land and water machines, built by the Aeromarine Plane and Motor Co., at Keyport, N.J., U.S.A. Except that the seaplane has a larger wing area, these two types differ only in dimensions and minor details, so that the following notes apply equally to both machines. The designs were got out by Mr. Charles F. Willard, special attention being given to producing a machine, which, whilst being light and simple in construction, will be capable of withstanding the abnormal strains imposed upon machines of this type.

The main planes are in four sections, two upper and two lower, the former being attached to two pairs of inverted V *cabanes*, and the latter being secured to the *fuselage*. Both top and bottom planes are set at a dihedral angle of 1°, and the top plane is staggered forward 1 ft. 6 ins. R.A.F. No. 6 wing-section is employed. The main spars are of I section

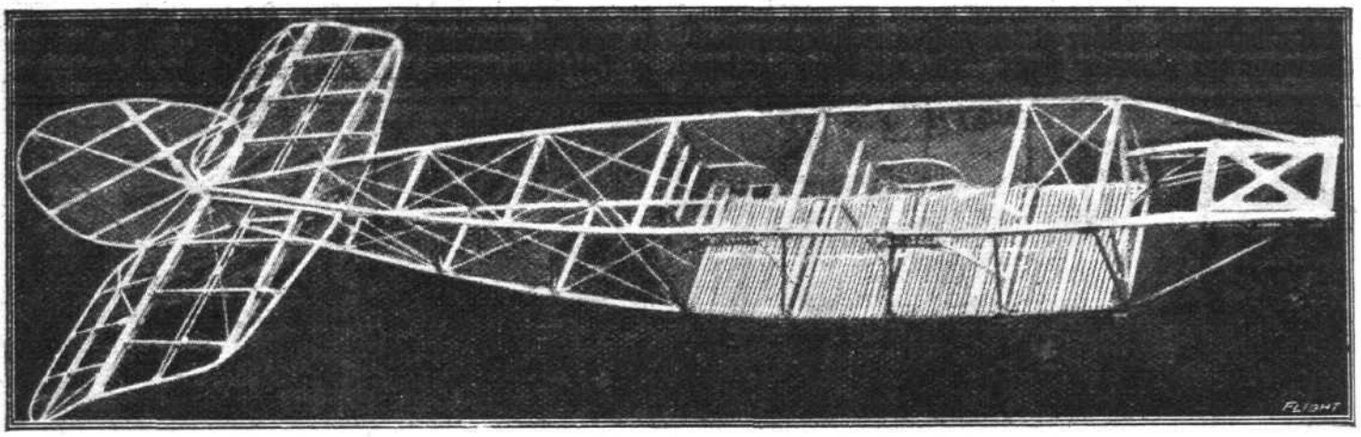


Three-quarter rear view of the Aeromarine training tractor biplane, land type.

and the ribs, which are spaced about 1 ft. apart, have the same section, being built up with lightened webs reinforced between the lightening holes to provide against shear. The leading edge is stiffened by a thin veneer to maintain the curvature. The whole of the wing framework is wire braced, and solid



THE AEROMARINE TRAINING TRACTOR BIPLANE, LAND TYPE.—Plan, side and front elevations to scale.



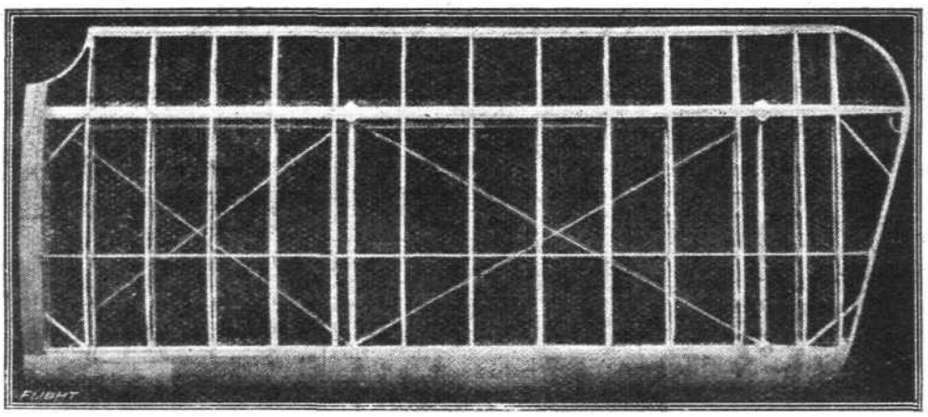
The *fuselage* construction of the Aeromarine tractor biplane.

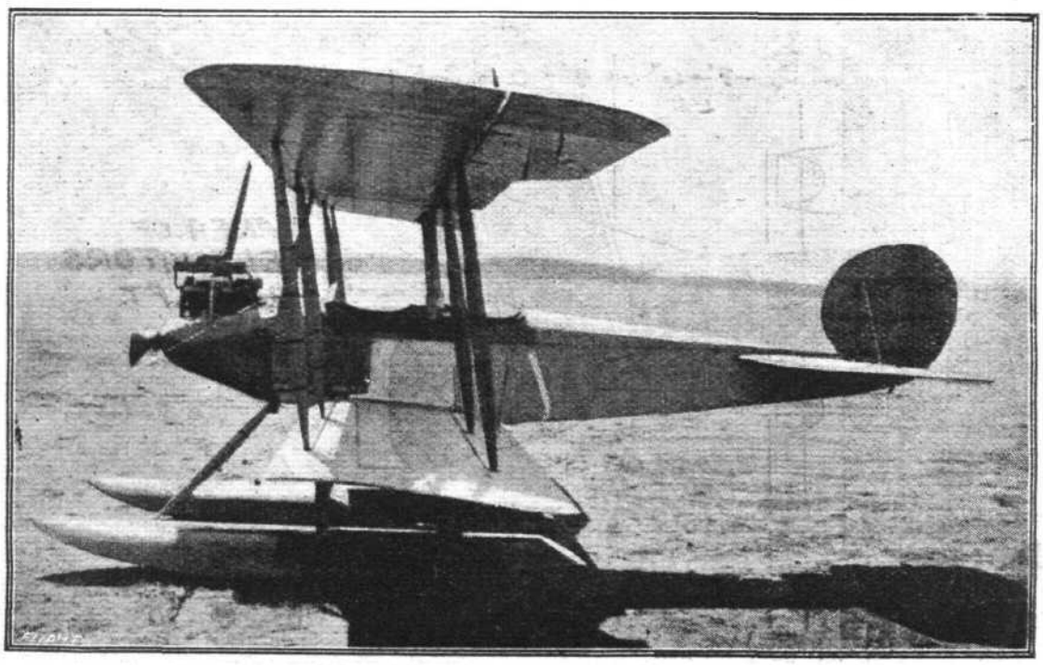
wood compression members relieve the main ribs of strains due to drift. The covering is raw Irish linen, having equal strength both in warp and weft, weighing 4 oz. per sq. yard. It is laid diagonally on the wing, with seams lapped and double sewed, and covered with linen tape as a protection from the weather. The fabric is given from three to five coats of dope and a final coat of varnish.

Two pairs of struts on each side of the *fuselage* separate the top and bottom planes. These struts are hollowed, dovetail jointed and wrapped at five points with linen thread. Their section and proportions have been based upon data obtained from a series of tests on full-sized models. The interplane strut fittings have been designed so that no bolts pass through the spars. One of these fittings was illustrated in "FLIGHT" for March 15th last on page 250. Comparatively large *ailerons*, of the interconnected type, are hinged to the rear spars of the top plane.

The tail surfaces consist of a divided double cambered stabilising plane mounted on either side of the *fuselage*, two elevator flaps attached to the

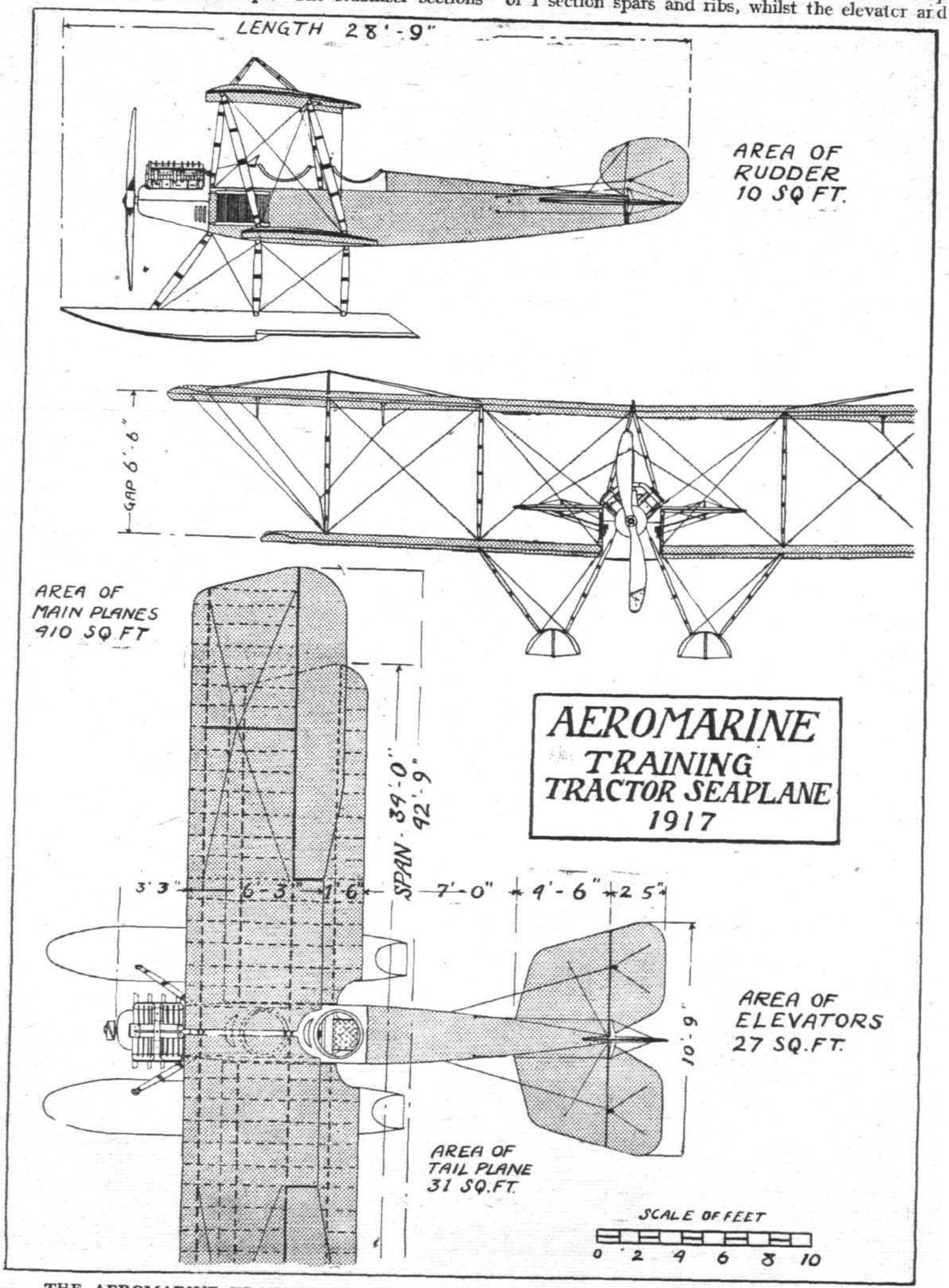
One of the lower planes of the Aeromarine tractor biplane, showing construction.





Side view of the Aeromarine training tractor seaplane.

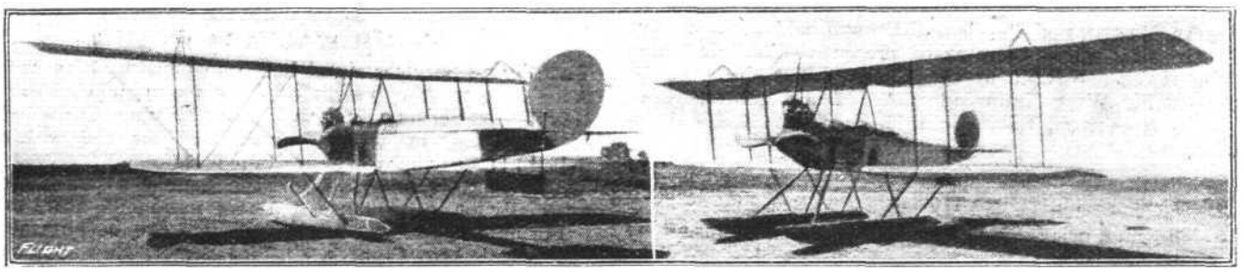
trailing edge of the stabilising plane by four hinges, and a balanced rudder of streamline section mounted between the elevator flaps. The stabiliser sections are easily detachable from the *fuselage*, being mounted in sockets running through the latter. It is built up of I section spars and ribs, whilst the elevator and



THE AEROMARINE TRAINING TRACTOR SEAPLANE.—Plan, side and front elevations to scale.

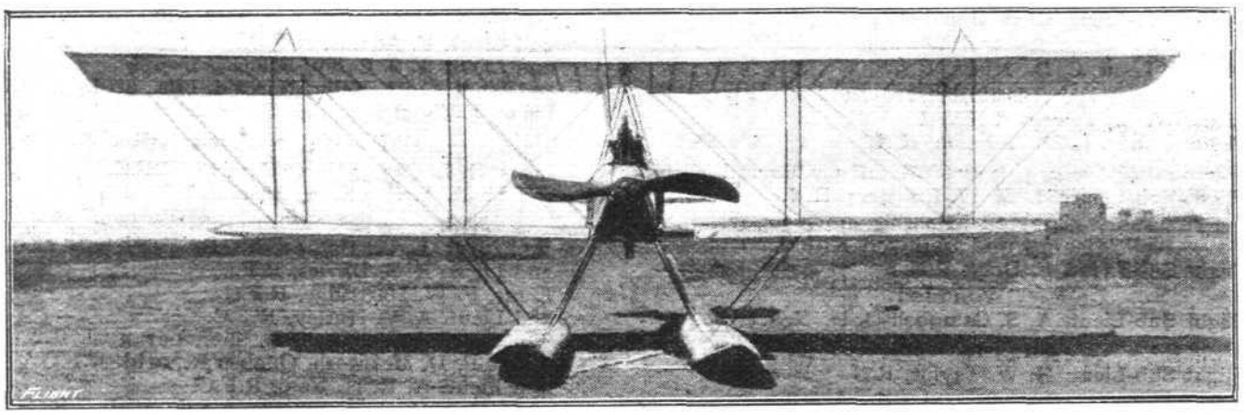
rudder frames are of steel tubing with spruce ribs. The steel tube rudder post is attached to a pressed steel stern post on the *fuselage*. All control surfaces are covered with the same material as the main planes.

In designing the *fuselage* special attention has been given to the easy replacement, in case of breakage, of the various parts. The *fuselage* is of rectangular section, tapering to a vertical knife-edge at the rear. It has a turtle deck top, the portion aft of the cockpits being detachable. The *longerons* are of large section spruce, lightened by channelling wherever possible. The struts are also of spruce, and the whole structure is strongly wire braced. As on the main planes, the fittings are designed so that no bolts pass through the *longerons*. The engine mounting is of steel throughout, and is exceptionally strong and light. The forward portion of the *fuselage* is covered with sheet aluminium, and the remainder with fabric. Two cockpits, in tandem, are provided, the front one for the pupil and the rear one for the pilot. Dual Dep. control is installed, and both cockpits are provided with a full complement of instruments. The fuel tanks are placed alongside the occupant of the front seat, and are filled from the outside. The overall length of the *fuselage* is 22 ft. 6 ins., and the maximum width and depth 2 ft. 6 ins. and 3 ft. 6 ins. respectively. The engine is either a Hall-Scott "A 7 a" 100 h.p.—as shown in the photographic reproductions—or the Aeromarine 100 h.p. 8-cyl. V, as shown in the scale drawings. In either case, however, the radiators are mounted on the sides of the *fuselage*.



Three-quarter rear and three-quarter front views of the Aeromarine training tractor seaplane.

In the land machine the undercarriage is of the conventional V type, designed, as far as possible, with parts interchangeable, so that repairs are easily effected. The seaplane is fitted with a pair of long pontoon floats, arranged catamaran fashion. They are each 16 ft. 6 ins. long, 2 ft. 6 ins. beam, and 1 ft. 5 ins. deep, and have V bottoms and semi-circular tops. Located 7 ft. 6 ins. from the stern of each pontoon is a 3-in. step, with air leads built in to reduce the vaccum at this point. The floats are constructed of spruce, ash and mahogany, the hull consisting of double diagonal planking with fabric in between. They are divided into several water-tight bulkheads. Three pairs of struts connect the floats with the *fuselage*, and in addition a strut is carried from the floats up to the lower planes immediately under the inner pair of interplane struts. A small float is mounted under the tail.



Front view of the Aeromarine training tractor seaplane.

"X 66" Raid (July 7th).

July 27th.

THE latest reports show the following revised list of the casualties which resulted from the air raid of July 7th :—

Killed: Men, 42; women, 9; children, 8. Total, 59.
Injured: Men, 98; women, 45; children, 50. Total, 193.
These figures include all casualties of every nature.

Fire Stations and Air Raids.

A NOTICE has been posted outside the seventy-nine stations of the London Fire Brigade in the L.C.C. area, stating :—

"No information can be given at fire stations during air raids or supposed imminent air raids.

"No person can be permitted to take shelter inside fire stations, as the presence of members of the public has been found to interfere seriously with the working of the service."

Help for Air Raid Orphans.

THE committee of the Royal Female Orphan Asylum have offered to admit, without election or payment, ten girls who were orphaned in the recent air raids in London.

German Raid Victims.

AMONG the victims of the July 7th raid was a baker, named Frantzmann, a naturalised German, and his daughter. At the inquest on the latter it was mentioned that the father at one time occupied a shop which was destroyed in a previous raid, and that he himself had just given up the tenancy.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

SPECIAL COMMITTEE MEETING.

A SPECIAL MEETING of The Committee was held on Saturday, the 28th ult., when there were present:—Col. Sir Capel Holden, K.C.B., F.R.S., in the Chair, Lieut.-Col. W. D. Beatty, R.E., Wing-Commander A. M. Longmore, R.N., Mr. J. H. Nicholson, Lieut.-Com. H. E. Perrin, R.N.V.R. (in attendance).

Club House.

The following prices have been fixed for the present by the Committee:—

Bedroom (including Bath)	.. 5s. each per night.
Breakfast	.. 2s. 6d.
House Luncheon ..	.. 2s. 6d.
House Dinner	.. 3s. 6d.

Billiard Room.

The Billiard Room is now open for the use of the Members.

THE FLYING SERVICES FUND administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

Subscriptions.	£	s.	d.
Total subscriptions received to July 24th, 1917	11,858	5	7
Staff and Workers of Gwynnes, Ltd. (Forty-third contribution)	9	16	7
Total, July 31st, 1917	11,868	2	2

B. STEVENSON, Assistant Secretary.
3, Clifford Street, New Bond Street, W. 1.

THE ROLL OF HONOUR.

REPORTED by the Admiralty:—

Accidentally Killed.
Flight Sub-Lieut. L. H. Brett, R.N.

Died of Wounds.
Ob. Sub-Lieut. C. B. Orfeur, R.N.

Accidentally Drowned.
Lieut. W. B. Hervey, R.N.V.R.
Flight-Comdr. L. D. Morrison, R.N.

Previously Missing, now Officially reported Killed.
Flight-Sub-Lieut. M. W. W. Eppstein, R.N.

Previously reported Missing, now reported Missing and believed Killed.
Flight Sub-Lieut. F. Bray, R.N.

Wounded.
Flight Sub-Lieut. A. S. Campbell-Orde, R.N.

Slightly Wounded.
Flight Sub-Lieut. H. W. Taylor, R.N.

Accidentally Injured.
Prob. Flight Officer E. L. Bragg, R.N.
Flight Sub-Lieut. C. L. Nightingale, R.N.
Flight Sub-Lieut. F. J. Vincent, R.N.
Flight Sub-Lieut. W. C. Wilson, R.N.

Slightly Injured.
Prob. Flight Officer C. W. Emmett, R.N.

Missing, believed Killed.
Flight Sub-Lieut. T. C. May, R.N.
Actg. Flight-Comdr. J. E. Sharman, D.S.C., R.N.

Missing.
Flight-Lieut. J. A. Page, R.N.

Previously reported Died as Prisoner, now reported Alive and Still a Prisoner.
Flight Sub-Lieut. B. A. Trechmann, R.N.

Previously Missing, now Officially reported Prisoner.
Flight Sub-Lieut. W. R. Walker, R.N.

Reported by the War Office:—

Killed.
2nd Lieut. H. C. Brufton, Rif. B. and R.F.C.
Capt. M. Johnstone, R.F.C.
2nd Lieut. P. E. Palmer, R.F.C.
53358 2nd Air-Mech. T. Duncan, R.F.C.
25501 1st Air-Mech. J. O. Jessop, R.F.C.
43271 2nd Air-Mech. S. McMahon.
2056 Sergt. H. A. Whatley, R.F.C.

Died of Wounds.
Lieut. H. E. M. Porter, Cent. Ont. attd. R.F.C.
6564 L.-Corpl. F. Russell, Lancers attd. R.F.C.

Accidentally Killed.
69421 2nd Air-Mech. A. Fenton, R.F.C.

Previously Missing, now reported Killed.
2nd Lieut. F. Adams, R.F.C.
2nd Lieut. A. S. Carey, R.F.C.
2nd Lieut. O. R. Kelly, North'd. Fus., attd. R.F.C.
Lieut. J. Thompson, R.F.C.

Missing, believed Killed.
Lieut. G. L. Paget, North'd., attd. R.F.C.
2nd Lieut. A. H. Searle, Aust. F.C.

Wounded.
2nd Lieut. L. W. Barney, R.F.C.
2nd Lieut. R. S. Davies, R.F.C.
Lieut. F. W. Hartridge, R.F.C.
2nd Lieut. A. V. Hurley, R.F.C.
Capt. R. J. Lowcock, M.C., Sher. For. attd. R.F.C.
Lieut. P. D. McIntosh, Quebec R., attd. R.F.C.
2nd Lieut. A. R. H. Noss, R.F.C.
2nd Lieut. D. G. Rouquette, A.S.C., attd. R.F.C.

Missing.
2nd Lieut. V. C. Coombs, R.F.C.
2nd Lieut. G. Davis, R.F.A. and R.F.C.
2nd Lieut. C. J. Felton, R.F.C.
Lieut. W. E. Grosset, High. Cyclist Bn., attd. R.F.C.
Lieut. R. B. Hay, M.C., W. Yorks., attd. R.F.C.
2nd Lieut. R. G. Jardine, R.F.C.
2nd Lieut. G. A. H. Parkes, R.F.C.
Lieut. O. J. Partington, R.F.C.
2nd Lieut. A. S. Shepherd, D.S.O., M.C., R.F.C.
2nd Lieut. W. G. Thompson, Suffolk and R.F.C.
Lieut. D. S. Weld, W. Ontario R. attd. R.F.C.
Lieut. C. S. Workman, M.C., Sco. Rif., attd. R.F.C.

Previously reported Missing, now reported Prisoners in German hands.
2nd Lieut. F. Barrie, R.F.C.
2nd Lieut. B. S. Lister, R.F.C.
2nd Lieut. B. C. Moody, Lond. R. and R.F.C.
2nd Lieut. G. M. Robertson, High. L.I. and R.F.C.
Capt. A. de Selincourt, R.F.C.

Corrections:

Reported Missing.
2nd Lieut. K. G. Cruikshank, R.F.C., *should read* 2nd Lieut. K. G. Cruickshank, R.F.C.

Previously reported Missing, now reported Prisoner in German hands.
Lieut. H. H. Cotton, Inf., attd. R.F.C., *should read* Lieut. H. Cotton, Quebec R., attd. R.F.C.



[As a number of letters reach us signed with initials only, some of which do not give a complete address, we would point out that such communications cannot be dealt with in our columns. Full name and address, which will not be published, must always be given.—ED.]

Notice to Correspondents in General.

Applications for commissions in the Royal Naval Air Service should be addressed to the Director of Air Services, Admiralty, S.W. The necessary form and conditions of entry can be obtained from the Secretary of the Admiralty.

Applications for commissions in the Royal Flying Corps should be sent to the Director-General of Military Aeronautics, Hotel Cecil, Strand, W.C.

Those who wish to enlist in the R.N.A.S. should apply to the nearest naval recruiting station or to the R.N.A.S. Drafting Office, Crystal Palace, S.E. Skilled mechanics are taken whatever their army classification, but unskilled men are only taken if they are classified B1, B2, or C1.

Recruiting for the R.F.C. is closed for the time being, and any enquiries should be made to the Officer Commanding, Royal Flying Corps Depôt, Farnborough.

Enquiries with regard to appointments in the A.I.D. should be addressed to the Chief Inspector, Aeronautical Inspection Department, Hotel Cecil, W.C. 2.

H. O. W. (Acton).—To obtain the Royal Aero Club certificate the three following tests must be carried out in the presence of an official observer :—Two flights of at least 5 kilometres (3 miles 185 yards) over a course marked out by posts 500 metres (547 yards) apart, the turns to be made alternately to right and left, so that the flight will be a series of figures of 8. One altitude flight, during which an altitude of at least 100 metres (328 ft.) above the starting point must be attained, the descent to be made with the motor cut off. In the first two flights the machine must be brought to rest not more than 50 metres (164 ft.) from a point previously indicated by the pilot. As regards the expense, you will find it cheaper to join a school, since you would have to deposit the value of a machine before obtaining the use of one.

"B. E." (Folkestone).—You will find all the information you want in the Wolseley-Renault Handbook, which can be had from "FLIGHT" Offices for 5*s.* 4*d.* post free.

C. J. V. (Gosport).—Quite early in the war the French were employing the method of firing the machine guns "through" the revolving propeller. By this method, which the famous French aviator Garros is generally acknowledged to have first used, small deflectors of armour plating are secured to the propeller blades for a short distance in the vicinity of the point where the machine-gun projectiles would strike. Between the rate of firing of the gun and the number of revolutions of the propeller, a certain percentage of the bullets would hit the deflectors and drop down harmlessly, the remaining rounds passing out between the blades. This method was, we believe, copied by the Fokker firm, but has now given way to the system whereby the firing of the gun is interrupted while a propeller blade is in line with the gun by a system of cams and levers worked by the engine. We are not aware that the Fokker firm have built machines in which the gun is fired through the propeller boss, although such an arrangement has been successfully employed, especially in conjunction with certain engines in which the propeller is driven through a reduction gearing.

L. C. J. (Earl's Court).—Although tilting the propeller in the manner suggested in your letter would have the effect of altering the angle of incidence as regards the wings of an aeroplane, it would be necessary, in order to make use of this variation, to correspondingly change the attitude of the *fuselage*, which would, therefore, be flying tail high or tail low exactly as in the case of the ordinary aeroplane. This would, of course, nullify any advantage of the tilting propeller.

R. B. (Essex).—We do not know at what altitude the raiders crossed the coast, but when over London they were, we think, flying at from 10,000 to 12,000 ft. The fact that they appeared to be much lower was no doubt due to atmospheric conditions and to the great size of the Gotha biplanes.

J. E. C. (Southminster).—We have no particulars of the machine beyond those published in our issue of July 12th. As the illustrations of this machine and of the Gotha are not our copyright we cannot supply prints, but you might apply for these to the Editor of *L'Aérophile*, 35, Rue François-1er (Champs Elysées), Paris.

"Pilot" (Bordon).—"Air Navigation for Flight Officers," by Lieut.-Commander Dixon, is concerned solely with the steering of the aeroplane, and so does not deal with the management of the machine. It deals with such subjects as compasses, weather, astronomy, charts, &c. It can be had from "FLIGHT" Office for 11*s.* post free.

H. G. W. (Hull).—Several machines of the tandem wing type have been built and flown, although not, we believe, with any great success, due probably to the comparative inefficiency of wings thus placed. One of these machines, the Albessard, was described in the May 3rd, 1917, issue of "FLIGHT." A great number of biplanes without a *fuselage* have been built. The early Farmans and Wrights were of this type, and the more recent Farmans, F.E.'s, Vickers, and de Havilland "Pushers," although having an enclosed *nacelle*, are also of the no-*fuselage* type. By looking through the 1914, 1915 and 1916 volumes of "FLIGHT" you will find numerous illustrations of "Pusher" biplanes.

Lieut. J. S. H. (C.E.).—See paragraph at the head of this column.

C. E. L. (Hull).—You cannot obtain a commission in either of the Air Services until 18 years of age. If you are willing to pay a premium you should have no difficulty in getting apprenticed to a firm of aircraft constructors. The "FLIGHT'S" Trade Directory, published every week in our advertisement columns, will furnish you with the addresses of all the leading firms.

H. S. (Berkhampstead).—The machine in question is a B.E. 2 e. The S.E. family are single seaters, with only one pair of inter-plane struts on each side.

L.-Cpl. W. G. (B.E.F., France).—Strictly speaking it is incorrect to call an aeroplane designed to rise from and alight on the surface of water a hydroplane, which word indicates a motor boat with a stepped flat bottom that enables it at high speeds to rise partly out of the water, skimming along on its planing surface only. In the early days of aviation aeroplanes used over the sea were generally termed hydro-aeroplanes. Not infrequently the "aero" is dropped and the word hydroplane used loosely to indicate the seagoing aeroplane. At the present day the word seaplane is generally employed to indicate a hydro-aeroplane. The former word (seaplane) is now used as a collective noun, including both aeroplanes fitted with floats instead of wheels, and flying boats.

H. (Bedford).—The anchor on the left arm indicates leading rank. The crossed axes are worm by carpenters, so that probably the rank is Chief Carpenter. A chief armourer wears a horizontal gun barrel and crossed axe and hammer.

"Lofty" (Brough.).—We can scarcely believe that lightening only of an engine could increase the power by 20 h.p., especially, as you point out, with the number of revolutions remaining the same. There is probably some other alteration which has escaped you, but which has played a more important part in the increase in power than the mere reduction in weight.

"Sparks" (Manchester).—"The Elementary Principles of Wireless Telegraphy" should meet your requirements. The two volumes cost 4*s.* post free from "FLIGHT" Offices.

FROM OTHER LANDS.

STANDARDISATION IN THE U.S.A.

THE Society of Automotive Engineers, New York, has approved of the following recommendations of the Aeronautic Division of its Standardisation Committee :—

Airplane Controls.

The Deperdussin (Dep.) and stick control are recommended for standardisation. Sketches illustrating typical arrangements of these controls are not reproduced here as they are so familiar to our readers.

Loops for Hard Wires.

The method of fastening ends of hard wires, shown in Fig. 5, is recommended for standardisation, unless objected to by either the Army or Navy. The method of fastening to be used is the present British standard, consisting of an oval coil of wire, through which the hard wire is slipped, bent in the form of a loop, inserted again and the end bent over against the coil. The whole is then soldered.

Splices for Flexible Cable-Ends.

Flexible cable splices (see Fig. 2 and Table I) are proposed for standardisation, if no objection is received from the Army and Navy. Fig. 2 shows the cable end wrapped around a "standard thimble," recommended in a later paragraph of this report.

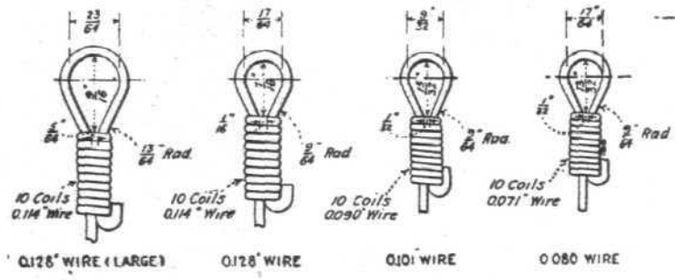
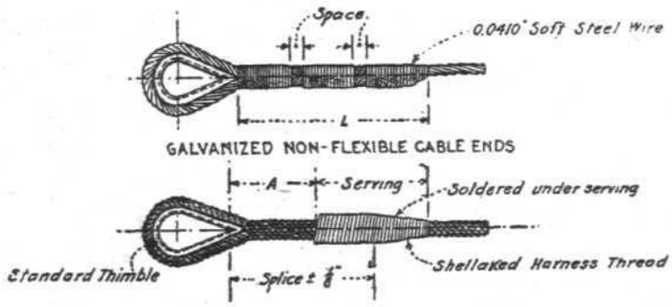


Fig. 1.—Sizes of loops for hard wires.



Flexible cable ends.

Figs. 2 and 3.—Proposed standards for cable ends.

The length of splice from pointed end of opening in the thimble is represented by "splice plus or minus $\frac{1}{8}$ in." The end of the splice is wrapped with a "serving" of shellaked harness thread. Dimension A represents the distance from the end of the opening in the thimble to the end of the "serving."

TABLE I—*Proposed Splices for Flexible Cable-Ends.*

Diameter of Cable		Length of Splice.	Number of Tucks	Length of Serving.	A	Full Strength of Cable.
$\frac{3}{32}$	7 × 14	$1\frac{1}{4}$		1	$\frac{1}{2}$	800
$\frac{1}{8}$	7 × 19	$1\frac{1}{2}$	3 over core buried.	1	$\frac{1}{2}$	2,000
$\frac{5}{32}$	7 × 19	$1\frac{3}{4}$	4 under	$1\frac{1}{4}$	$\frac{1}{2}$	2,800
$\frac{3}{16}$	7 × 19	$1\frac{7}{8}$		$1\frac{1}{4}$	$\frac{3}{4}$	4,200
$\frac{7}{32}$	7 × 19	2		$1\frac{1}{4}$	$\frac{3}{4}$	5,600

Galvanised Non-Flexible Cable-Ends.

The splices for galvanised non-flexible cable-ends shown in Fig. 3 and Table II are recommended for standardisation, this section being subject to approval by the Army and Navy. The total length of splice is indicated by L. Soft steel wire of 0·041 in. diameter is to be used for wrapping. Two spaces are to be left between convolutions of the wrapping wire, the width of the spaces being indicated in Table II, which also gives the sizes and strength.

TABLE II—*Proposed Splices for Galvanised Non-Flexible Cable-Ends.*

Diameter of Cable.		L.	Space.	Wind.	Full Strength of cable.
$\frac{1}{16}$	1 × 19 ..	$1\frac{1}{2}$	$\frac{1}{8}$	1	500
$\frac{3}{32}$	1 × 19 ..	2	$\frac{1}{8}$	$1\frac{1}{4}$	1,100
$\frac{1}{8}$	1 × 19 ..	$2\frac{1}{2}$	$\frac{1}{8}$	$1\frac{1}{2}$	2,100
$\frac{5}{32}$	1 × 19 ..	$2\frac{3}{4}$	$\frac{1}{8}$	2	3,200
$\frac{3}{16}$	1 × 19 ..	3	$\frac{3}{16}$	$2\frac{1}{4}$	4,600
$\frac{7}{32}$	1 × 19 ..	$3\frac{1}{2}$	$\frac{3}{16}$	$2\frac{1}{4}$	6,100
$\frac{1}{4}$	1 × 19 ..	4	$\frac{1}{4}$	$2\frac{1}{2}$	8,000

Note.—Solder without drawing temper of wire.

Thimbles for Wire Ends.

Subject also to disapproval by the Departments of War and Navy, the thimbles* for wire ends as shown in Fig. 4, are submitted for standardisation. The sizes are roughly indicated in Table III.

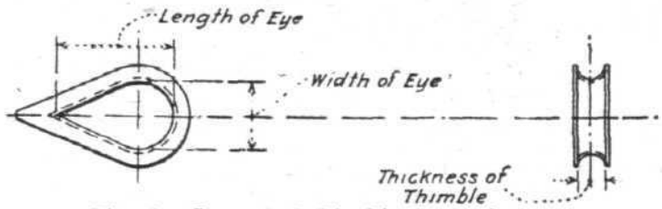


Fig. 4.—Proposed thimbles for wire ends.

TABLE III—*Proposed Dimensions for Thimbles for Wire Ends.*

Size of Rope.	Thickness of Thimble.	Width of Eye.	Length of Eye.
$\frac{1}{16}$–$\frac{3}{32}$	0·075	0·35	0·70
$\frac{1}{8}$	0·12	0·35	0·70
$\frac{5}{32}$	0·17	0·40	0·80
$\frac{3}{16}$	0·21	0·50	1·00
$\frac{7}{32}$	0·24	0·60	1·20
$\frac{1}{4}$	0·27	0·70	1·40
$\frac{9}{32}$	0·30	0·80	1·60
$\frac{5}{16}$	0·33	0·90	1·80
$\frac{3}{8}$	0·39	1·00	2·00

Turnbuckles.

The turnbuckles shown in Fig. 5 and Tables IV and V are recommended for standardisation. The dimensions given are for short and long turnbuckles, each length having either two eye-ends or one eye-end and one yoke-end.

TABLE IV—*Proposed Dimensions for Turnbuckles.*†

Item.	Short.	Long.
Length of barrel	2	4
Lengths between eyes :—		
With threads flush with ends of barrel	4	8
With maximum extension	$4\frac{3}{16}$	$8\frac{3}{16}$
With minimum extension	$3\frac{1}{4}$	$5\frac{1}{2}$

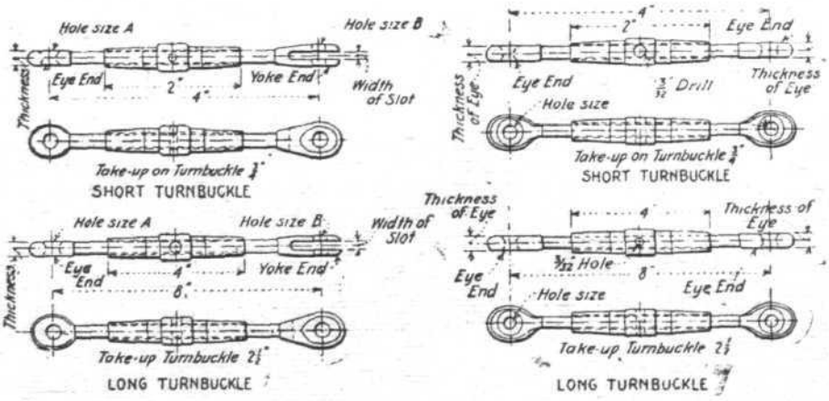


Fig. 5.—Showing types of proposed standard turnbuckles.

Marking of Fuel and Oil Pipe Lines.

The following markings of pipe lines are recommended for standardisation : gasoline pipe lines—mark with red stripes.

* From Plate No. 7, following page 118, First Annual Report of the National Advisory Committee for Aeronautics (1915).

† With either two eye ends or one eye and one yoke end.

½ in. wide painted around the pipes 24 in. apart. Oil pipe lines : mark with white stripes ½ in. wide, painted around the pipes 24 in. apart.

Engine Supports.

The division recommends the following dimensions (in inches) for standard engine supports :—

Distance between timbers	12	14	16
Width of bed timbers	2	2¼	2½
Distance between centres of bolts ..	14	16¼	18½

Spark-Plug Dimensions.

The following dimensions for spark-plugs are recommended :
Thread : 18 mm. and 1½ mm. pitch.

Form of thread : international standard (same as U.S. standard only with one-half as much truncation at root of thread).

Gasket shoulder to end of shell : ⅝ in.

Hexagon : 1 in. across flats.

TABLE V—*Strength (in lbs.) of Proposed Turnbuckles.*

No. ..	1	2	3	4	5	6	7	8
Short..	500	1000	1500	2000	2500	3000	3500	—
Long ..	500	1000	1500	2000	2500	3000	3500	4000

No. ..	9	10	11	12	13	14	15
Short..	—	—	—	—	—	—	—
Long ..	4500	5000	6000	7000	8000	9000	10000

Revised Air Raid Warnings.

IT has been officially announced that the scheme of air raid warnings, as outlined in "FLIGHT" last week, has been revised as follows :—

"When from information received from the military authorities an air raid upon London is considered probable, the following steps will be taken for giving warning to the public to enable them to take cover :

"In the County of London two sound signals (rockets) will be fired in succession from Fire Brigade stations so selected as to cover the area to be warned. Outside the County of London, but within a 10-mile radius from Charing Cross, two sound signals will be fired from certain police stations, which will be notified locally. Simultaneously with the firing of the rockets regular and special constables, on foot and on cycles, will circulate throughout the street exhibiting a 'Take Cover' placard (red letters). When the military intimate that the raid is over regular and special constables will be sent out exhibiting an 'All Clear' placard (black letters), and calling attention to their presence by sounding the bells of their cycles or by sounding their whistles—two blasts in quick succession.

"The public are warned that the cover taken should be effective ; a doorway or open archway is not effective cover, as from a bomb exploding in the street close by protection would not be afforded. Persons in buildings are advised to keep away from windows as far as practicable, and to vacate the top floors."

Air Raid Shelters in London.

THE Lord Mayor has affixed outside the Mansion House the following notice : "During an air raid persons may take shelter in this building at their own risk."

A similar notice, printed in bold red lettering, has been sent to the owners of all suitable buildings in the City. Arrangements have already been made with the owners of many properties, and the list is being added to daily.

To Deal with Fires from Hostile Aircraft.

IT was announced last week that the Home Secretary has appointed the following Committee to draw up a scheme for the co-ordination of the measures to be taken by the London Fire Brigade and the fire brigades under the control of local authorities in the Metropolitan Police District for dealing with fires caused by air-raids, and to make any recommendations which appear to be desirable :—Messrs. J. W. Restler, Chief Engineer Metropolitan War Board (Chairman) ; S. G. Gamble, Divisional Officer, London Fire Brigade ; F. B. Willis, Senior Superintendent, London Fire Brigade ; F. J. Bell, Chief Officer, Kingston Fire Brigade ; J. W. Dane, Chief Officer, Croydon Fire Brigade ; W. Danzey, Superintendent, Hornsey Fire Brigade ; J. Farmery, Chief Officer, Ilford Fire Brigade ; A. T. Overall, Chief Officer, Acton Fire Brigade ; and A. Robinson, Chief Officer, West Ham Fire Brigade.

The Secretary of the Committee, is Mr. R. Darling, Home Office.

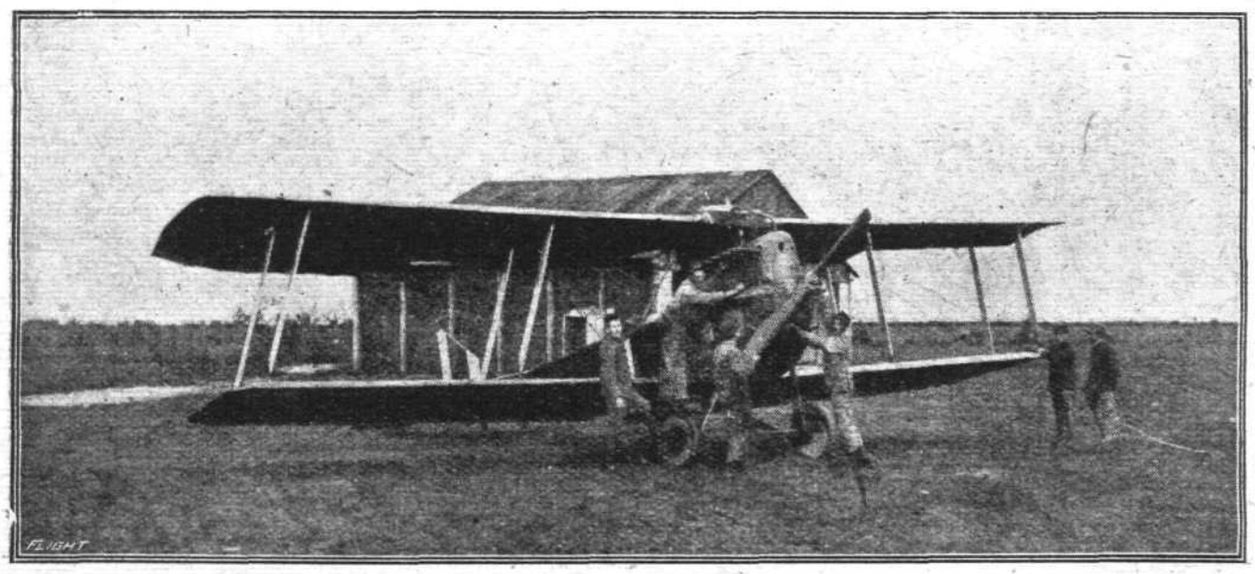
The Irrepressible Souvenir Maniac.

ARISING out of the air raid on July 7th and the falling of Lieut. Salmon's machine near Dartford, five men and four women were charged at Dartford on July 27th with being in the possession of public property. The accused persons were : William Palmer, Erith ; Sidney Williams, Lee ; Edith Glenister, Slades Green ; Ada Rogers, Peckham ; Gilbert Williams, Erith ; Sarah Chritwell, Sidcup ; Beatrice Thomas and Dorothy Law, Slades Green.

Palmer and Williams were accused of having the pilot's gloves, Beatrice Thomas the safety belt, and Law his goggles. The others were alleged to have taken parts of the machine.

Captain Herbert Sisons, R.F.C., said the safety belt would have been taken off the dead pilot when he was lifted from the machine, and the gloves must actually have been taken from the dead body. The belt, gloves and goggles had been recovered by the police.

The defendants said they acted innocently, and thought they were committing no offence in taking the things "out of curiosity." Each was fined £1 except Rogers and Thomas, who did not appear and whose cases were adjourned. The Chairman expressed the hope that the punishment would be a warning to others.



Reproduced by special permission of the Italian Government.

FROM "THE WAR IN ITALY."—An Austrian biplane of the Aviatik type captured by the Italians.

AIRISMS FROM THE FOUR WINDS.

SIR COURTENAY CECIL MANSEL, Bt., of Maes-y-Crugiau Manor, Carmarthenshire, at present a Lieutenant in the R.F.C., has been adopted as prospective candidate for Coventry at the next election.

AFTER all, the policeman's whistle is to be brought into use in connection with air-raid warnings, but for the present only for helping to announce "All clear" after the event.

IN the opinion of Dr. Hillard, who presides over St. Paul's School, Hammersmith, the most notable war feat of the 2,550 old Paulines who have joined the Forces, was that performed by a member of the Air Service, who went over the German lines and, getting into difficulties, came down. He spent three or four months behind the German lines, made his way across the frontier, and returned with very valuable information to the British Headquarters in France.

Such praise is the more pleasing from the fact that St. Paul's holds such a fine record for war work, past scholars having earned amongst its honours one V.C., six C.B.'s, 10 C.M.G.'s, 54 D.S.O.'s, 104 M.C.'s, one Albert Medal (first class), four Military Medals, and 27 foreign decorations, whilst 80 old boys are prisoners of war in Germany.

ANOTHER example of W.O. man waste, as set forth by the *Daily Mail* :—

"The father of an Air-Mechanic stationed at an R.F.C. depôt, states that his son was, until two months ago, a fully qualified wireless operator in a British transport. He had an unbroken record for ability and good conduct, with special mention from his captain for his behaviour in trying circumstances. Two months ago this operator and wireless engineer, with eight years' experience, was persuaded to join the R.F.C. on the understanding that he should be a wireless operator. He has been placed in a labour company for road-making and gravel-shifting. He has complained, but his last job was to assist in digging and levelling ground for a tennis court. His proficiency as an operator is vanishing."

ABOUT the greatest compliment to Mr. Lloyd George and his "getting on with the war" methods is the universal and vicious abuse of him in the German Press.

THE crypt at the Guildhall and certain parts of the Old Bailey are to be placed at the disposal of the public for taking protection during air raids, and notices are to be exhibited showing the best methods of securing entrance to these places of safety. A simple plan might be to enlist as guides to the latter haven of safety a few of the "old birds," who should be fairly intimate with the interior of this City landmark.

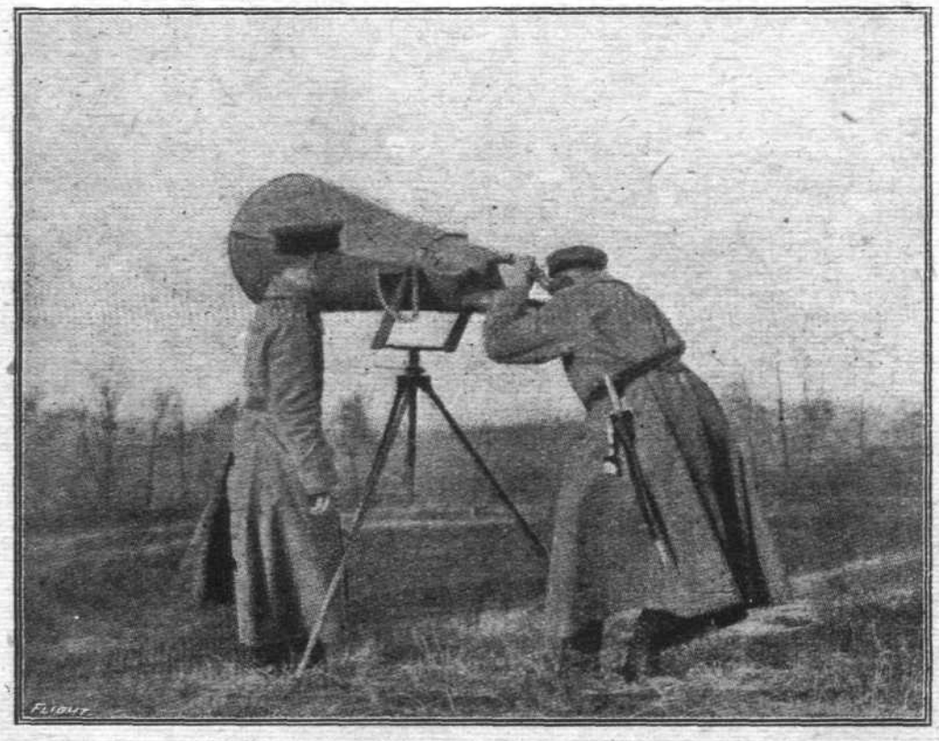
A propos the syren trials for warning London, in the *Referee* musical column, what is presumably the opinion of an expert, is set out by way of criticism of the authorities for employing this method of alarm.

"It is evident," writes this critic, "that those who control the air defences of London have little knowledge of the science of music, otherwise they would not have decided upon a noisy noise to warn Londoners of the approach of an air raid. The carrying power of sound largely depends upon its musical quality. This is why intoning has been adopted in large churches. Noise is the result of confused vibrations, and the friction set up by the atmosphere is so great that its travelling power is soon arrested. If sound is to be adopted as a warning, recourse must be had to purely musical tones. Of these, the most piercing is that of the trumpet. Let arrangements be made for the sounding of a short trumpet phrase from all our police and fire stations, and I will undertake to say Londoners will be aroused. It will be remembered that we are told that a trumpet will be the last call to attention of the world's inhabitants. As to the phrase to be used, I know of none more appropriate than the Curse motif from the German opera "The Flying Dutchman."

WHAT'S in a name, indeed. Bert Kite, a Middlesex man well known in Yiewsley, has enlisted in the R.N.A.S.

THE "Tanks" as followers of the armoured cars, which were originally a "side-show" of the R.N.A.S., have now blossomed out into a "Tank Corps," which promises to attain highly important proportions.

OUR National War Museum seems to be going ahead without check, and enlisting the greatest enthusiasm on all sides. The decision to have, as a leading feature of the building, engraven on bronze tablets the name of every man killed in the war, is an incentive to contribute such other tokens as may be associated with one or any of those heroes who have died in their duty for their King and country.



A Dutch listening post for alien aircraft. (*By courtesy of "Het Vliegveld."*)

IT is to be hoped the Flying Services will not, by its inherently special character, attain the unenviable and doubtful honour which for so many years has attached to the theatrical profession. Whenever any person of either gender, particularly those who by their sex could claim to be in the class of the gentler, perpetrated any more than usually flagrant or indecent violation of the law or good taste, the description in the Police Courts usually ran, "describing herself as an actress," or "on the stage." It looks as if the perpetration of all sorts of iniquities is now to be attributed to "having been in the Flying Corps" (or "R.N.A.S."), and thereby nerves all become shattered, and so on. It's a low excuse anyway, even for the "crook," as the *real* nerve-shattered man has everybody's instant sympathy, and it is to be hoped, when made in Court, may come to be regarded by our magistrates, in most cases, as a half-confession in advance of "Guilty." That may at

once stop this fraudulent R.F.C. stunt of the rogues and vagabonds, who always will find a living under their own particular chosen formula.

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AIR raids are responsible for a considerable number of curious "catch" announcements by shrewd folk, who thereby see an opening for attracting particular attention to their "goods." The following, however, may easily, with its prominent "Bargain Sale," have attracted the wrong customer :—

AIR RAIDS—DANGEROUS BUILDINGS!
NEW CONCRETE BUILDING. BARGAIN SALE.
(Between Ludgate Hill and Holborn.)
TOTAL FLOOR SPACE, 64,000 ft. ABOUT 26,000 ft. AVAILABLE FOR OCCUPATION (11,000 ft. BEING ON FIRST FLOOR). Remainder let off. Long Leasehold. Price less than Building would cost to erect. (£35,000 can remain.)
Apply—FRANK WAINWRIGHT,
38, FINSBURY PAVEMENT, E.C.2.

One can imagine the ingenuous advertiser in the depths of despair at having to appease the wrath of the million or so of female bargain "salers," when they expected to scramble in the usual way for the goods at 9 a.m. !

IN THE HANDS OF THE ENEMY.

THE official *Norddeutsche Allgemeine Zeitung* gives the following list of British aviators and machines which are claimed to have fallen into the German hands during June. The total number of machines is 83 :—

Thirty-two Sopwiths. Two-seaters.
No. A 1012 : Lieut. R. Neill, Lieut. S. N. Harley, both dead.
Motor Clerget, No. W.D. 6291 : Occupants dead.
No. A 8280 : Lieut. Smith, Corp. Thowsen, both prisoners.
No. B 1750 : Occupants unknown.

One-seaters.
No. B 1583 : 2nd Lieut. Stewardson, prisoner.
No. A 6204 : Lieut. David Cameron, prisoner.
No. 4632 : Occupant dead.
No. 9625 : Occupant dead.
Motor Clerget, No. 1293 R. : Occupant dead.
Motor Wolseley Hispano, 684/2233 : Capt. T. Malcolm Dickenson, wounded.
No. A 1566 : Douglas D. Steeves, wounded.
No. 5025/1252 : Occupant dead.
Rotary engine, No. 35021/4694 : Lieut. Chalmers, prisoner.
No. A 8899 : Lieut. Harold Hamer, dead.
No. B 1730/1439 : Major C. E. Sutcliffe, dead.
No. A 7306 : E. Y. J. Grevelink, dead.
No. unknown : Lieut. March, prisoner.
No. A 6207 : 2nd Lieut. Robertson, dead.
No. B 1745 : 2nd Lieut. Shirley, dead.
No. 6362 : Lieut. F. W. Smith, dead.
No. A 8919 : Lieut. Rogerson, prisoner.
No. unknown : Lieut. R. Illis, dead.
No. B.V.H. : A. Iondes [? Ionides], dead.

In the case of three of the Sopwith one-seaters the numbers of the machines and the names of the occupants were undecipherable.

Triplane. Two-seater.
No. 6293 : Occupants dead.

One-seaters.
Motor Clerget : Lieut. Parker, dead.
No. N 6306, L.A.T. : Lieut. Holcroft, wounded.
No. 5358 : Lieut. Girling Robert, dead.
No. 5376 : Lieut. G. Nash, wounded.

In the case of one Sopwith triplane the number of the machine and the name of the occupants were undecipherable.

Twenty Nieuports. One-seaters.
No. A 6675 : 2nd Lieut. F. Darrie, prisoner.
No. 3491 : Lieut. Waters, prisoner.
No. B 1548 : Occupant unknown.
No. 3204 : Lieut. F. P. Reeves.
No. unknown : Lieut. Shaw, prisoner.
No. B 1674/3453 : Occupant unknown.
No. 2900 : Lieut. Boote, prisoner.
Motor Rhone, No. 7494 : 2nd Lieut. Slee, prisoner.
No. B 3481 : Occupant wounded.
No. B 1550 : Lieut. Mussared, prisoner.
No. B 1689 : Lieut. Anderson, dead.
No. 3443 : David Rhys Cadwgan Lloyd, dead.
No. 1680 : Lieut. George Carman Aiknis, prisoner.
No. B 3495 : Jerrat, prisoner.
No. unknown : 2nd Lieut. G. T. Harker, prisoner.
No. B 1607 : Lieut. Smith, dead.
No. B 1572 : 2nd Lieut. Bird, dead.
No. A 6718 : Lieut. D. C. G. Murray, prisoner.

In the case of two Nieuport one-seaters the numbers of the machines and the names of the occupants were undecipherable.

Seven Spad. One-seaters.
No. A 6157 : Lieut. A. J. Mitschel (?), wounded.
No. B 1524 : Lieut. Illingworth, wounded.
No. B 3460 : 2nd Lieut. Count L. T. B. di Balme.
No. B 3504 : Capt. Davids, prisoner.
No. B 1663 : Lieut. Maurice Lowe, dead.

In the case of two Spad one-seaters the numbers of the machines and the names of the occupants were undecipherable.

Six F.E. Two-seaters.
No. B 1 A 857 : Capt. F. P. Don, Lieut. Harries, both prisoners.
No. unknown : Lieut. Pollard, wounded ; Lieut. Ferriman, dead.

One-seaters.
No. 4887 : Lieut. P. E. Stacpoole O'Longan, dead.
No. unknown : Occupant Hair, prisoner.

In the case of two F.E. one-seaters the numbers of the machines and the names of the occupants were undecipherable.

Six R.E. Two-seaters.
Stationary motor : Lieut. C. W. Devenish, Lieut. H. S. R. Cottenil (?), both dead.
No. unknown : Lieut. Philipp, dead ; second occupant not found.

In the case of two R.E. two-seaters the numbers of the machines and the names of the occupants were not decipherable.

One-seaters.
Two R.E. one-seaters, in which the numbers of the machines and the names of the occupants were undecipherable.

Five S.E. One-seaters.
Rotary motor, No. 4858 : Occupant dead.
No. 4862 : Lieut. Spearpont, prisoner.
No. A 8922 : Occupant prisoner.
No. A.C. 3 : Lieut. W. Turner-Coles, prisoner.

In the case of one S.E. one-seater the number of the machine and the name of the occupant were undecipherable.

Three B.E. Two-seaters.
No. A 3162 : Lieut. Bowe, dead ; Lieut. Lister, wounded.
No. 24522 : C. B. Lieut. O'Brien, dead ; Sergt. Mollison, prisoner.
No. 2800 : Lieut. Fred. Vipon (?), Lieut. George Simon, both prisoners.

One Vickers. One-seater.
No. A 4925 : Lieut. Sturgess, prisoner.

One D.D. Two-seater.
Motor Rolls-Royce, No. 4250148 : Corpl. Thomson, Lieut. Smith, both dead.

One Martinsyde. One-seater.
No. unknown : 2nd Lieut. Stures, prisoner.

One de Havilland. Scout.
No. uncertain : Captain of the 25th Squadron, burnt to death.

IT seems a sensible decision of Sir Charles Johnston at the Mansion House last week, although possibly bureaucratic red-tapism may be thereby horribly scandalised, to dismiss the charge against James Robert Allen, a motor car driver, for using without lawful authority the label "War material. O.H.M.S. Urgent." on his vehicle. It was contended, and presumably upheld, that as he was employed by a large engineering firm exclusively making engines for aeroplanes, and doing no private work, he was on Government service.

TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister journal) of July, 1907. "FLIGHT" was founded in 1908.

A GERMAN AIRSHIP.

There is very little doubt that the German authorities mean business, for as we go to press comes the news that they have at last achieved a very remarkable success with their own machine. On Tuesday of this week it remained in the air nearly 3½ hours, during which time it described numerous evolutions, which demonstrated that it was apparently under most perfect control. Afterwards a trip was made in the direction of Tegel and Charlottenberg, further circles and turnings being carried out above the latter suburb to the great delight of the spectators below.



Casualties.

Flight Sub-Lieutenant RIVERS GORDON BEGG, R.N., who was killed while on a service flight on July 17th, was a son of Mr. and Mrs. H. C. Begg, of Beechfield, Langley Road, Watford, and was born in Calcutta in 1897. He was educated at Dorset House, Littlehampton, and Oundle School. He joined the Royal Naval Air Service in June, 1916, was selected for seaplane service, and after qualifying proceeded on active service in March, 1 17. His elder brother, Second Lieutenant H. Berners Begg, who came home from India in July, 1916, to join the Royal Flying Corps and took his "wings" in September of that year, has been missing since November 24th, 1916.

Flight Sub-Lieutenant E. W. BUSBY, R.N., who was shot down and killed in an air fight on July 10th, was the second son of Mr. and Mrs. G. E. Busby, of Selly Hill, Birmingham. He was educated at King Edward's High School, Birmingham, and when war broke out was serving his engineering apprenticeship with the Birmingham Small Arms Co. He joined the R.N.A.S. in June, 1916, went abroad last April, and was responsible for bringing down one kite balloon and four enemy machines, driving down two others, and assisting in destroying another two.

Captain DONALD ALASTAIR LESLIE DAVIDSON, M.C., R.F.C., killed on April 30th, was the elder son of the late Colonel Leslie Davidson, C.B., R.A., who died on active service in France in 1915, and of Lady Theodora Davidson, sistet of the present Lord Albemarle. He was born in 1891, and educatod at Wellington College, and was a Page of Honour to King Edward VII. from 1902 to 1907. He obtained his commission on March 30th, 1915, and went on service in October of the same year, first to Egypt and then to Mesopotamia. There he was very badly wounded in a fight with a Fokker, which attacked him while he was dropping food over Kut. He was awarded the Military Cross "for conspicuous determination and gallantry" on that occasion, and was invalided home. On his recovery he was promoted captain, and spent some time as an instructor at the Central Flying School, but returned to active service at the front last spring, was reported "missing" on April 30th, and shortly afterwards notified killed. Captain Davidson, who was 25 years of age, had travelled extensively. He had studied mechanics and science at McGill University, Montreal, and had worked in the Far West in the service of the Canadian Pacific Railway Company. During a long period of inaction necessitated by a breakdown in his health he had studied several European languages, each in its own country. Queen Alexandra sent his mother a message of sympathy and "sorrow for her dear Page of Honour."

Second Lieutenant JAMES HAROLD HARTLEY, Royal Munster Fusiliers, was killed on July 25th. He was the third son of the late Robert Hartley, of Green House, Balderstone, near Blackburn, formerly a well-known breeder and exhibitor of hackneys, and of Mrs. Robert Hartley, of Crabtree House, Brindle, near Chorley. He was 20 years old, and was educated at Mostyn House and Shrewsbury Schools. He entered Sandhurst in August, 1915, and obtained his commission in the following April. From September, 1916, to March, 1917, he served with his regiment in the trenches, but in March, 1917, he volunteered for the Royal Flying Corps, and had been flying at the front since May. He was in a recent fight when six British machines attacked 18 German machines. The petrol tank of his machine was shot away, but its occupants succeeded in getting back into the British lines. A private letter from a brother officer to his mother states that he was killed while flying on July 25th, but no official intimation has yet been received. On the previous day Mrs. Hartley had received a letter from her son to say that he would shortly be home on leave.

Lieutenant D. R. C. LLOYD, R.F.C., reported as missing since June 16th, is now reported as being killed at the front on that date. He was the younger son of Mr. and Mrs. Llewelyn Lloyd, of Kerby, Essex. He was 20 years of age, and was twenty-second in direct male descent from Bleddyn ap Cynfyn, Prince of Powys and North Wales. On joining the Army, in 1914, he first of all saw service with the Essex Yeomanry in Belgium and France, and in 1915 and 1916 on the same Fronts with the Loyal North Lancashire Regiment, to which he had been transferred. He was wounded during the Battle of the Somme, and in the autumn of last year joined the R.F.C.

Second Lieutenant HAROLD EMBLETON MACFARLANE, R.F.C., who was killed on July 14th, aged 18, was the eldest son of Mr. and Mrs. Harold Macfarlane, of Northwood, Middlesex. Born at Harrow in 1898, he received his early education at Mr. Douglas Gould's Preparatory School, The Briary, Westgate-on-Sea. From The Briary he proceeded, in September, 1911, to Westminster School, where he remained five years. He played for his house (Home Boarders) at cricket, football and fives, and took part in the drill competition of the O.T.C. On leaving school at the end of the summer term of 1916, when he received his 3rd eleven colours, he joined the Army, and received his commission in February and his "wings" in May. He went to the front in June.

Lieutenant DOUGLAS M. F. SINCLAIR, R.F.C., of Heaton, reported missing on the 30th March, 1917, is now presumed killed on that date. Lieutenant Sinclair was a volunteer in the Royal Naval Volunteer Reserve, and on the outbreak of war he served a year with the Navy. In December, 1915, he received a commission in the Royal Naval Division, and in August, 1916, he was attached to the R.F.C., and gained a first-class pilot's certificate. Early in March he went to France.

Captain R. N. THOMAS, R.F.C., was killed in action on July 23rd while serving with the Egyptian Expeditionary Force. For eleven months he was in France, and was recently awarded the Croix de Guerre. He left England only a few weeks ago. Captain Thomas was the eldest surviving son of Brigadier-General Sir Owen and Lady Thomas, Cemaes, Anglesey, and was one of three brothers who served under their father in the Welsh Army Corps in 1914–15, being transferred to the R.F.C. in 1915. He was in the South African War as trumpeter in the Prince of Wales's Light Horse, a regiment which was raised and commanded by his father. His youngest brother, Lieutenant Trevor Thomas, Royal Welsh Fusiliers, was killed in action in France in January, 1916, and his only surviving brother is a flight commander in the R.F.C.

Lieutenant MAURICE WOTTON THOMAS, R.F.A. and R.F.C., reported missing on August 5th last year, now officially presumed killed on that date, aged 21, was the younger son of Mr. and Mrs. Alick Thomas, of Worcester Park, Surrey. He was educated at Parkside, Ewell, and in September, 1907, passed into Osborne College, where, as the result of an epidemi'c he contracted an illness, which necessitated his being invalided, as unfit, from the Royal Navy in 1910. After 18 months of convalescence he was allowed to continue his education with Mr. Sellar, of St. Andrew's, and Mr. Tinniswood, of Camberley, whence he passed into Woolwich in 1912, and, passing out in September, 1914, received his commission in the R.F.A. In May, 1915, he went to the front as A.D.C. to a general commanding an R.A. division, and was promoted lieutenant in July, when it was decided that he was specially qualified by his training for the R.F.C., to which he was seconded as observer. After many thrilling experiences he was wounded in an accident in December, 1915, and came home. He made a speedy recovery, and was sent to a reserve squadron and gained his wings. In May, 1916, he was again sent out, doing much valuable work over the enemy positions. He was a fine revolver shot and a member of the shooting eight when at Woolwich. His elder brother, Captain Alec Vaughan Thomas, E. Surrey Regiment, attached 2nd Hampshire Regiment, was killed in Gallipoli, August 6th, 1915, aged 22.

Second Lieutenant MICHAEL TOPHAM, R.F.C., who was reported missing on April 13th and is now officially believed killed on that date, was the eldest son of Mr. F. D. Topham,

of Tonbridge, formerly of the Madras and Southern Mahratta Railway, India. Born in India in 1895, he came to England at an early age, and was educated first at Yardley Court School (Mr. A. L. Bickmore), Tonbridge, afterwards proceeding with a foundation scholarship to Tonbridge School, where he became head of Manor House. At school he specially distinguished himself as a member and for two years the captain of the O.T.C. shooting eight. He left school in 1914 after gaining an open scholarship at Downing College, Cambridge, and a Judd scholarship from the school; but on the outbreak of war he enlisted in the U.P.S. Battalion of the Royal Fusiliers, obtaining the rank of sergeant. In the following year he went with his regiment to France, and served through the winter of 1915–16. In 1916 the regiment returned to England, and he entered a cadet battalion and, passing out first, volunteered for the R.F.C. He obtained his wings early this year, and was soon afterwards sent to the front as a flying officer. Within a month of his returning from a successful bombing raid with his squadron he was reported missing. Information through a reliable channel has now been received that he was shot down and instantly killed.

Second Lieutenant ROBERT G. BERWICK, R.F.C., who was killed in a flying accident at Scampton, near Lincoln, on July 6th, was the younger son of Mr. and Mrs. W. J. Berwick, of Schubert Road, East Putney, and was 20 years of age. He joined the Inns of Court Officers' Training Corps in November, 1915, serving with that unit until transferring to the R.F.C. in February, 1917, just recently gaining his "wings." He was buried on July 12th, at Kingston Vale Cemetery, with full military honours, the body being borne to the cemetery on a gun-carriage of the Royal Horse Artillery.

Second Lieutenant GEORGE EVERETT CAYFORD, R.F.C., accidentally killed whilst flying on July 16th, was the only son of Mr. and Mrs. E. Geo. Cayford, of The Mall, Wanstead. He was educated at Bancrofts Schools, Wanstead, and was apprenticed to Messrs. Broom and Wade, Ltd., Admiralty engineers, &c., of High Wycombe. Upon completing his indentures he joined the Artists' Rifles O.T.C. in February, 1916, and later received a commission in the R.F.C. He was a somewhat skilful magician and very popular throughout the squadron he was attached to, and greatly esteemed by numerous friends, his death at the age of 21 is deeply regretted. He was accorded a military funeral at the City of London Cemetery on July 20th, the coffin, covered with the Union Jack, being borne on a gun carriage drawn by a motor lorry of the R.F.C., the pall-bearers being Lieuts. P. W. L. Jarvis, W. Fraser, G. T. Stoneham, W. Hunt, Blaney and Bruce. The drums which played the Dead March in Saul during the procession to the cemetery, the buglers which sounded the "Last Post" after the burial and the firing party were of the A.O.C.B., and the escort of the 39th Squadron, R.F.C.

Second Lieutenant THOMAS HUGGAN, R.F.C., killed while flying in England on July 24th, aged 18½, was the younger son of Mr. and Mrs. Joseph Huggan, of Ravensmount, Pudsey, Yorks. He was educated at Marlborough College, where he was head of his house (Littlefield), a member of the school hockey XI, and a XL cap. He entered the R.F.C. in September, 1916, on his eighteenth birthday. From December, 1916, to last July he was in France as an observer, and he had just begun his pilot's course in England when he met his death.

Second Lieutenant E. P. HUGHES, R.F.C., who has died as the result of a flying accident, was the eldest son of Mr. E. J. Hughes, of Ellesmere, Knapdaar, near Burghersdorp, Cape Colony, and a nephew of Colonel Hughes, of the Defence Department, Pretoria. He came to England with the South African Contingent in 1915, was transferred to the R.F.C. in August, 1916, and obtained his pilot's certificate early in the present year. The injuries he received on June 9th were very serious, and he died in a military hospital last Friday. Before his accident he had been for some time engaged on munitions work with certain inventions of his own.

Missing and Prisoners of War.

Mr. Malcolm Roberts, of Queen's Club, has received a letter from his son, Lieutenant R. M. ROBERTS, King's Own Yorkshire Light Infantry, attached R.F.C., reported missing on May 28th, stating that he is now a prisoner of war in Germany and only slightly wounded.

Lieutenant CHARLES S. WORKMAN, M.C., Cameronians and R.F.C., reported missing since July 17th, is the younger son of Charles Workman, M.D., 5, Woodside Terrace, Glasgow. He was educated at Glasgow Academy and Merchiston Castle School, Edinburgh, and had just started his medical course at Glasgow University at the end of October, 1914. In June, 1916, he joined the R.F.C. as observer, and was awarded the Military Cross in September. Having qualified as a pilot he returned to France in April, 1917. Lieutenant Workman is in his 21st year.

Married and to be Married.

The marriage of Flight Lieutenant (acting lieutenant R.N.) CHETWODE W. C. BROWNE, R.N., only son of Mr. and Mrs. Willis Browne, The Beeches, Caterham, and DOROTHY JANET, younger daughter of the late James CAPPON, of Fife, and of Mrs. H. Goodman, Banavie, Caterham, will take place at St. Mary's Church, Caterham, at 2.15 p.m. on Tuesday, August 7th. All friends will be welcome at the church.

The engagement is announced between Lieutenant A. G. C. WALLIS FAULKNER, R.F.C., only son of Mr. Arundell C. Faulkner, of Winnipeg, Canada, and grandson of the late Colonel H. D. Faulkner, 2nd Madras Infantry, and Mrs. Faulkner, 6, Netherton Grove, Chelsea, and MORNA GRACE, younger daughter of the late Sir John Lawson WALTON, K.C., M.P., Attorney-General, and Lady Lawson Walton, of Coombe Hill, Butler's Cross, Bucks.

A marriage has been arranged between Captain (temporary Major) C. T. MACLEAN, M.C., Royal Scots Fusiliers, attached R.F.C., and MARIA DOROTHY (BIRDIE) LEWIN, only child of Mrs. Lewin, Kirklevington Hall, Yarm.

The marriage arranged between Brigadier-General the Right Hon. J. E. B. SEELY, C.B., D.S.O., M.P., of Brooke House, Isle of Wight, and the Hon. Mrs. GEORGE NICHOLSON, widow of Captain George C. N. Nicholson, R.F.C., and youngest daughter of Viscount Elibank, took place on July 30th at St. Ethelburga, Bishopsgate.

The engagement is announced of Flight-Lieutenant L. CONRAD SHOPPEE, D.S.C., R.N., son of Mr. Eustace Cyril Shoppee of Cape Town, South Africa, and HILDA, only daughter of the late Captain THOS. A. TAIT, R.N.R., and niece of the Rev. R. Gifford-Wood, M.A., B.D., Vicar of East Cowton, Northallerton, Yorkshire.



Fatal Accidents.

AT an inquest held on July 24th on Flight-Comdr. L. D. Merrison, R.N.A.S., Lieut. W. B. Hervey, R.N.V.R., and 2nd Grade Air-Mech. H. R. Ward, R.N.A.S., who were drowned on July 21st, verdicts of "Accidental Death" were returned.

At an inquest on July 23rd on Lieut. J. L. Phillips, R.F.C., it was stated that, while on his second solo flight, he got away from the aerodrome and came down in a field of standing corn. From the position of the control and switch, it appeared that the engine was running nearly full out at the time of landing and the machine had turned over twice. A verdict of "Accidental Death" was returned.

Lieut. T. H. Coupe, E. Lancs., attd. R.F.C., was accidentally killed while night flying on July 25th.

2nd Lieut. T. Huggan, R.F.C., was killed while flying on the South Coast on July 24th. His machine side-slipped and caught fire in the course of a nose-dive, and the aviator's body was found among the wreckage.

Flight Officer F. H. M. Eberlin died in hospital last week as a result of injuries received in a fall in a meadow at South Hornchurch. He was just completing a flight when, in spinning to the ground, he failed to recover and the machine crashed to earth.

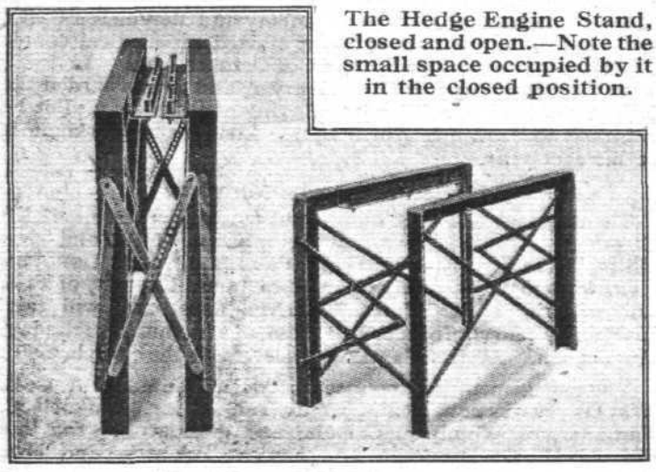
2nd Lieut. H. Duerden, R.F.C., was landing in a field in Lincolnshire on Saturday, when the aeroplane struck a tree, turned over and crashed to the ground. When the officer was picked up he was unconscious, and he died later in hospital.

The Dover Coroner held an inquest on July 30th on Lieut. A. R. Kilgour, R.F.C., who was killed while doing a tail slide. According to a witness who had previously completed a forty minutes' flight in the machine, it must have become uncontrollable, and, coming down in a steep spiral, crashed to the ground. Lieut. W. Williams, who was in the machine as pupil, was seriously injured. A verdict of "Accidental Death" was returned.

On the same day at Dover, an enquiry was held into the death of 2nd Air-Mech. T. J. Bassford, who was killed by the propeller of a machine which, in making a bad landing, crashed into a tent. The inquest was adjourned.

A USEFUL STAND FOR ENGINE REPAIRS.

OWING to the very exacting demands made upon the services of an aero engine, it is imperative that it should always be well looked after and kept in perfect trim. To ensure this, frequent examination of the parts most likely to give trouble and general overhauls become matters of more than occasional occurrence, and it will therefore be easily recognised that the stand on which the engine is mounted during the process of examination and repair should be capable of allowing the engine to be swung over, thus facilitating the removal of the lower half of the crank-case for the inspection of the crank-shaft, main bearings and the connecting rod big-ends. There is another feature which any universal stand should possess, *i.e.*, that of adaptability. So many different types and sizes of engines are in use by the Air Services, nearly all differing more or less as regards the placing of the engine brackets, that a fixed stand can only with difficulty be adapted to accommodate all types. By this we mean all the various



The Hedge Engine Stand, closed and open.—Note the small space occupied by it in the closed position.

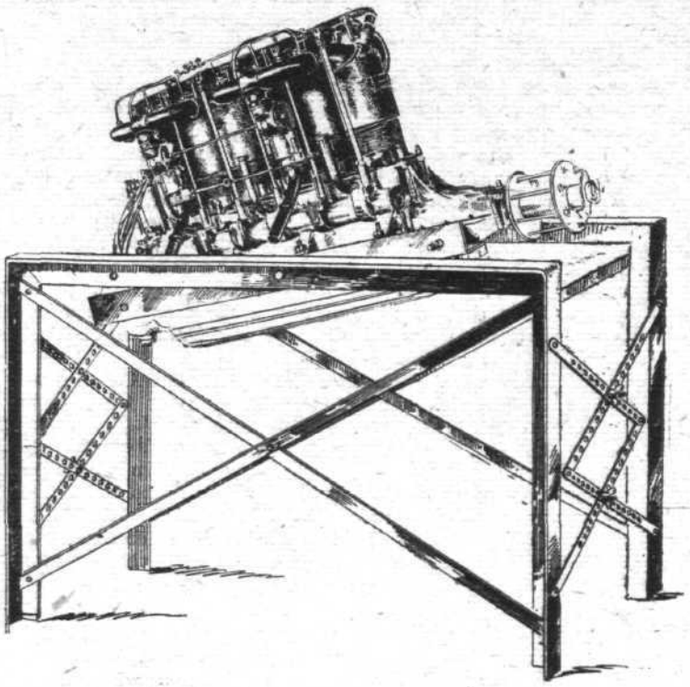
makes of stationary engines, as the rotary and radial engines are so fundamentally different as to require a specially designed stand.

An engine stand which appears to possess both these desiderata is being turned out by Messrs. N. Hedge and Sons, Motor engineers, of Neath, Glam. This stand, which is shown in the accompanying illustrations, has a main framework of 2½-in. steel angle, ¼ in. thick. Each of the sides is braced by flat steel ties, and the ends of the two halves of the frame are connected by sets of lattices which might at first sight be supposed to work on the "lazy tongs" principle. This is not so, however, but the numerous holes provided in the lattice bars allow of adjusting the width of the stand to suit engines of different widths. This adjustment is accomplished in a few moments, as the lattice bars are secured by bolts with wing nuts. The cradle supporting the engine takes the form of two steel angles, each supported on its centre by a heavy bolt passing through the top angle of the main framework. To these cradle angles are bolted double rails, which are prevented from touching the angles by placing washers between the rails and the angles. In this manner there is left sufficient space for the accommodation of a bolt with a very flat head, which can be moved longitudinally along the rails until they coincide with the holes for the holding-down bolts of the engine. For a finer lateral adjustment than that possible with the end lattices, the cradle angles are provided with short transverse slots for the bolts securing the rails of the cradle to the angles.

The engine to be repaired is lifted on to the cradle, which has previously been adjusted by means of the lattices and various cradle bolts, and is bolted down with four bolts. If desired, the engine may now be secured in the upright position by four small bolts, locking the vertical part of the cradle angles to the top angle of the main frame, and the cylinders can be removed. Or, if the main bearings and connecting rod big ends are to be inspected, the engine can be swung over with the cylinders pointing downward and locked in this position, when the bottom half of the crank-case is easily "get-atable." One of our illustrations shows an aero engine of the six-cylinder vertical type, mounted in the frame and slightly tilted, ready to be swung over on its back.

The dimensions of the stand are: Length, 5 ft. 6½ ins.; length of cradle, 4 ft. 3 ins.; height of stand, 2 ft. 9 ins.; maximum width of centre over bolt holes in cradle, 3 ft.

We understand that these stands are already being supplied in quantities to the M.T., A.S.C., and, as the principle appears to have certain very clear advantages for work on aero

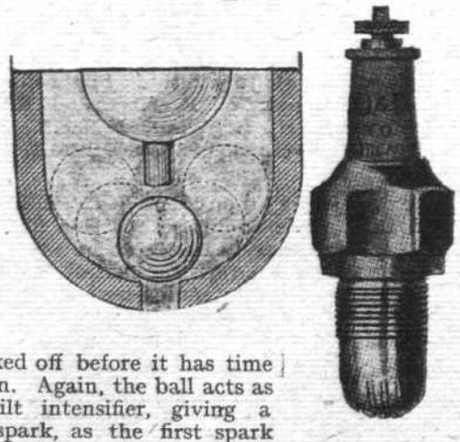


THE HEDGE ENGINE STAND.—The engine is shown slightly tilted, ready to be swung over on to its back. If desired, this stand can be furnished with four wheels, to facilitate moving it about from one place in the shop to another.

engines, more especially at engine repair parks where engines of different dimensions have to be overhauled, we are glad to have had this opportunity of bringing the existence of this ingenious stand to the notice of those likely to be interested. The makers, Messrs. Hedge and Sons, of Neath, Glam., will be pleased to furnish any further particulars desired.

AN ANTI-FOULING SPARK-INTENSIFYING PLUG.

FROM Chicago comes the newest thing in self-cleaning spark plugs, which is described as being soot and oil proof, and, if so—as seems clear enough—should be of particular value in aviation, and for the following reasons:—As one sees, the lower end of the plug is formed as a slotted chamber or cage, in which a hardened steel ball is kept in constant motion by vibration. Thus not only does any point on the ball become one certain negative electrode, self-cleaning, but any carbon deposited on the central positive electrode must



be knocked off before it has time to harden. Again, the ball acts as an inbuilt intensifier, giving a double spark, as the first spark jumps from the electrode to the ball and a second intensified spark occurs between the ball and the cage. This plug is marketed at $2 by the D. and D. Co., East Jackson Boulevard, Chicago, Ill.

The British Air Services

"PER ARDUA AD ASTRA"

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forth with, but subsequently, when it appears in the LONDON GAZETTE, *it is not repeated in this column.*

Royal Naval Air Service.

Admiralty, July 25th.

J. Flett entered as Prob. Flight Officer (Temp.), seniority Aug. 2nd.

J. H. Sayner granted a temp. commission as Lieut. (R.N.V.R.), seniority July 24th.

Admiralty, July 26th.

Prob. Ob. Officer (Temp.) G. H. Millar to "Furious"; July 25th.

Temp. Sub-Lieut. (R.N.V.R.) A. E. Reed promoted to Lieut. (R.N.V.R.), seniority June 30th.

Temp. Sub-Lieut. (R.N.R.) W. H. Bradley entered as Prob. Flight Officer (Temp.), seniority July 22nd.

Temp. Flight Sub-Lieut. (R.N.) L. E. Lander granted a temp. commission as Lieut. (R.N.V.R.), seniority July 23rd.

Temp. Prob. Flight Officer R. H. Catleugh entered as Sub-Lieut. (Temp., R.N.V.R.), seniority July 25th.

The following have been entered as Prob. Flight Officers (Temp.), seniority as stated: F. C. Fowkes; July 1st. H. Sutherland, A. L. Jones, A. C. Handford, K. Lockie and W. H. Bradley; July 15th. F. A. Giles and W. R. O. Midgley; July 16th.

Temp. commissions (R.N.V.R.) have been granted to the following, seniority July 25th:—Lieuts.: T. M. Gerrard, E. J. Castell, H. O. P. Hammond, B. J. S. Brown, E. G. Millar, P. W. Goodchild, H. S. Kelly, S. P. Holloway, F. H. Stanton, C. F. Hannaford and S. T. Buckland. Sub-Lieut.: W. A. Ross.

Admiralty, July 30th.

Temp. Assist. Payr. (R.N.V.R.) R. B. Guy, to "Queen," additional; July 28th.

Royal Flying Corps (Military Wing).

London Gazette Supplement, July 24th.

The following temp. appointment is made at the War Office:—

General Staff Officer, 2nd Grade.—Major M. Freeman, Worc. R., S.R., from a Staff Officer, R.F.C., 2nd Cl., vice Bt. Lieut.-Col. R. J. Armes, N. Staff. R.; April 25th.

The following appointments are made:—

Staff Officer, 2nd Class (graded for purposes of pay as a General Staff Officer, 2nd Grade, at the War Office).—Major M. Freeman, Worc. R., S.R., from Adjt.; Feb. 28th.

Flight-Commanders.—From Flying Officers, and to be Temp. Capts. whilst so employed: 2nd Lieut. S. F. Brown, S.R.; July 7th. Lieut. S. H. Clarke, M.C., Wilts. R., S.R.; July 10th.

Flying Officers.—2nd Lieut. E. G. H. C. Williams, R. W. Fus. (T.F.), and to be secd.; May 27th. 2nd Lieut. (Temp. Capt.) A. M. Maclean, Yeo. (T.F.), and to be secd.: May 28th. 2nd Lieut. J. FitzGerald, Ind. Army. Res. of Officers; June 13th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: B. C. W. Windle; June 25th. A. G. N. Jones, F. W. Wells, J. F. Bushe; June 26th. J. H. Dand; June 27th. 2nd Lieut. (on prob.) S. L. Crowther, S.R.; Temp. 2nd Lieut. (on prob.) J. Burdekin, Gen. List, and to be confirmed in his rank; June 30th. Lieut. W. R. Adkins, Lond. R. (T.F.), from a Flying Officer (Ob.), seniority Sept. 16th; July 1st. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: G. L. Ormerod, F. L. Yeomans; July 2nd. Temp. 2nd Lieut. W. S. Smeeth, R. Ir. Rif., and to be transfd. to Gen. List; 2nd Lieut. T. H. S. Crosby, Durh. L.I. (T.F.), and to be secd.; July 3rd. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: C. E. Stuart, D. W. T. Cain, A. F. McGlashan; Temp. 2nd Lieut. G. W. McKenzie, attd. R.W. Surr. R., and to be transfd. to Gen. List. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: C. P. Creighton, from a Flying Officer (Ob.), seniority May 19th; C. W. Crewe; Lieut. J. F. Verner, Can. Gen. List; Temp. 2nd Lieut. J. Mackenzie, attd. Sco. Rif., and to be transfd. to Gen. List; Temp. 2nd Lieut. (on prob.) W. O. Adams, Gen. List, and to be confirmed in his rank; July 4th. The appointment of 2nd Lieut. (Temp. Lieut.) O. V. St. J. Williams, Yeo. (T.F.), notified in the *Gazette* of June 13th, is antedated to Mar. 18th.

Flying Officers (Observers).—June 1st: 2nd Lieut. L. P. Sedgwick, E. Surr. R., S.R., seniority Aug. 14th, and to be secd.; Lieut. C. E. Lugard, E. Surr. R., seniority Feb. 4th, and to be secd.; 2nd Lieut. W. S. L. Payne, M.C., R.G.A., S.R., seniority Mar. 13th. 2nd Lieut. V. Hermann, R.F.A., S.R., seniority Mar. 28th; June 30th. June 30th, seniority April 22nd: L. G. W. Butchart, Can. Inf.; Lieut. W. P. Brnt, Can. Gen. List; Lieut. E. E. Showler, Can. Inf.; June 30th, seniority May 17th.

Assistant Wing Instructor in Gunnery (graded as an Equipment Officer, 3rd Class).—2nd Lieut. W. W. Moser, Bord. R., S.R., from Temp. Lieut., M.G. Corps; July 6th.

Balloon Officers.—July 4th: 2nd Lieut. R. S. Davey, R.F.A., S.R.; Temp. 2nd Lieut. A. Siddall, North'd. Fus., and to be transfd. to Gen. List.

Equipment Officer, 3rd Class.—Temp. Lieut. T. R. Gilby, R. W. Kent R., and to be transfd. to Gen. List; July 7th. The appointment of Temp. Lieut. G. H. L. Sweet, North'd. Fus., notified in the *Gazette* of June 22nd, is antedated to April 24th.

Memoranda.—Temp. 2nd Lieut. H. Bromley, R.E., relinquishes the rank of Temp. Capt. on ceasing to be employed with R.F.C.; July 6th.

Supplementary to Regular Corps.—2nd Lieut. (on prob.) F. R. L. Taylor resigns his commission; July 25th.

General List (R.F.C.).—Temp. 2nd Lieut. B. W. Morriss resigns his commission; July 25th.

Temp. 2nd Lieuts. (on prob.) are confirmed in their rank: N. L. Garstin and F. M. M. Ellis.

Appointment to temp. commissions as 2nd Lieuts. of the under-mentioned Cadets, notified in the *Gazette* of June 20th, is cancelled: C. W. N. Raymond and W. K. Bradley.

Cadet G. H. Swann to be Temp. 2nd Lieut. (on prob.); April 13th (substituted for *Gazette* notification May 3rd, page 4,204, incorrectly describing surname as Schwann).

London Gazette Supplement, July 25th.

The following temp. appointments are made at the War Office:—

Deputy Assistant Director.—2nd Lieut. (Temp. Capt.) G. W. A. Brown, R.F.C., S.R., from an Equipment Officer, 1st Cl., and to retain his temp. rank whilst so employed, vice Capt. (Temp. Lieut.-Col.) F. A. Wanklyn, M.C., R.A.; July 4th.

The following appointments are made:—

Flying Officers.—Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: J. H. Binns; June 25th. G. H. Swann; June 27th.

General List.—To be Temp. 2nd Lieuts. (on prob.): S. E. W. Taylor; May 28th. A. E. Fisher and G. R. Eaton; June 11th.

Supplementary to Regular Corps.—2nd Lieut. C. E. Finlay relinquishes his commission on account of physical unsuitability as a Pilot; July 26th.

2nd Lieuts. (on prob.) are confirmed in their rank: A. E. Woodbridge and A. B. Cochrane.

R. B. Bannerman to be 2nd Lieut. (on prob.); Mar. 29th.

London Gazette Supplement, July 26th.

The following appointments are made:—

Squadron Commander.—Capt. (Temp. Major) A. H. Jackson, Notts and Derby R., from a Chief Instr. in Gunnery (graded as a Sqdn. Comdr.), School of Mil. Aeronautics, and to retain his temp. rank whilst so employed; July 5th, seniority Oct. 25th.

Flight-Commanders.—From Flying Officers, and to be Temp. Capts. whilst so employed: Lieut. E. M. Lugard, R. Lanc. R.; Lieut. J. Butler, M.C., R. Ir. Fus.; 2nd Lieut. A. C. Reeves, S.R.; Temp. 2nd Lieut. C. D. Smart, Gen. List; July 12th. Temp. Lieut. H. W. Woollett, Gen. List; Lieut. S. R. P. Walter, R. W. Surr. R.; Temp. 2nd Lieut. (Temp. Lieut.) L. A. Hardwicke-Terry, R.E.; 2nd Lieut. St. C. C. Tayler, R. Suss. R.; July 13th.

Flying Officers.—Temp. 2nd Lieut. (on prob.) H. S. Preston, Gen. List; May. 4th. Temp. 2nd Lieut. (on prob.) B. S. Holloway, Gen. List: May 23rd, Temp. 2nd Lieut. (on psob.) H. N. Curtis, Gen. List; May 25th. 2nd Lieut. F. L. Craig-Kelly, R. W. Kent R., S.R., and to be secd.; May 28th. 2nd Lieut. G. A. Hill, Manch. R., S.R.; Temp. 2nd Lieut. (on prob.) K. B. Montgomery, Gen. List; May 29th. Temp. 2nd Lieut. H. Ibbotson, Gen. List; June 3rd, Temp. 2nd Lieut. (on prob.) J. L. S. Hanman, Gen. List; June 4th. 2nd Lieut. H. Puckle, Leic. R., from Lieut., Yeo. (T.F.), and to be secd.; June 13th. 2nd Lieut. J. F. Dewar, High. L.I. (T.F.), and to be secd.; June 14th. Temp. 2nd Lieut. (on prob.) E. Marsden, Gen. List, and to be confirmed in his rank; Temp. 2nd Lieut. J. C. O. Nelson, attd. Lpool. R., and to be transfd. to Gen. List; June 15th. 2nd Lieut. R. R. Heaton, Cyclist Bn. (T.F.), and to be secd.; June 16th. Temp. 2nd Lieut. W. English, Durh. L.I., and to be transfd. to Gen. List; June 17th. Temp. 2nd Lieut. (on prob.) S. H. Pilling, Gen. List, and to be confirmed in his rank; June 18th. 2nd Lieut. C. O. Rusden, Middx. R. (T.F.), and to be secd.; June 19th. Lieut. R. N. Keyser, E. Lan. R., S.R.; 2nd Lieut. T. Gilbert, Ind. Army Res. of Officers; June 20th. Temp. 2nd Lieut. (on prob.) R. H. Garratt, Gen. List; June 22nd. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: A. K. Bamber; June 28th. C. W. Middleton; June 29th. Temp. Lieut. P. W. Sim, R.A., and to be transfd. to R.F.C., Gen. List; June 30th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: R. A. Hewat, T. A. Killingsworth, J. Day, L. A. Bushe, T. E. Carley, E. G. Roberts, R. Wilson, W. G. Latham; July 2nd. Temp. 2nd Lieut. H. T. W. Oswell, Ches. R., and to be transfd. to Gen. List; Temp. Lieut. J. F. Ellor, York. and Lanc. R.; 2nd Lieut. A. M. Bennett, R. W. Surr. R., and to be secd.; July 3rd. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: A. J. S. Sisley; July 3rd. P. S. Birkbeck, C. M. Pears; July 4th. 2nd Lieut. (on prob.) J. T. Menzies, S.R.; 2nd Lieut. (on prob.) A. N. Baker, S.R.; Temp. 2nd Lieut. (on prob.) H. J. Cockman, Gen. List, and to be confirmed in his rank; 2nd Lieut. (on prob.) H. Seymour, S.R.; 2nd Lieut. (on prob.) W. R. A. Campbell, S.R. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: G. F. Thomas, A. E. Ikin, C. B. Stratton; July 5th. Lieut. J. C. Barraclough, York. R., from a Flying Officer (Ob.), seniority Feb. 21st. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: W. H. Brown, S. H. Wallage, D. C. Faulds, Lieut. H. Carnegie, Can. Inf. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: S. M. Johnson, R. H. Sawyer; July 6th. P. F. Paton; July 7th.

Flying Officers (Observers).—Lieut. G. C. Shortridge, Ind. Army Res. of Officers, seniority Dec. 20th; 2nd Lieut. E. H. P. Jolly, Ind. Army Res. of Officers, seniority Dec. 28th; Capt. R. G. Kitson, Devon. R. (T.F.), seniority Jan. 1st, and to be secd.; May 28th.

Balloon Commander (graded as a Balloon Officer).—Temp. Lieut. W. T. Taylor, Gen. List, from a Balloon Officer; April 8th.

Adjutant.—Major Lord, R.E. Innes-Ker, I. Gds., S.R., from a Special Appointment (graded as a Park Comdr.); July 4th.

Park Commander.—Capt. A. F. A. Hooper, N. Staff. R., from an Equipment Officer, 1st Cl., and to be Temp. Major whilst so employed; June 23rd.

Equipment Officers, 3rd Class.—2nd Lieut. H. V. Page; May 15th. Temp. 2nd Lieut. (on prob.) J. Booth, Gen. List, and to be confirmed in his rank; June 11th. Temp. 2nd Lieuts., Gen. List: R. P. Allison, H. Haworth, A. H. Read, E. C. Robinson, P. Seymour, McL. N. Staight, B. Z. Simpson, S. H. Tigg, H. G. Toyé; June 26th.

General List.—To be Temp. 2nd Lieuts. (on prob.): Lieut. H. S. Preston. Austr. Imp. Force; Nov. 6th. W. Blackwell; May 15th. To be Temp, 2nd Lieuts.: 2nd Cl. Air-Mech. R. P. Allison, Pte. A. H. Read, from O.T.C.; June 26th.

General List (R.F.C.).—Temp. 2nd Lieut. H. D. Layfield (on prob.) is confirmed in his rank.

Cadets to be Temp. 2nd Lieuts. (on prob.):—July 5th: H. T. Adams, H. A. Airey, G. F. Anderson, H. N. S. Anderson, J. Anderson, H. M. Armstrong, A. A. MacD. Arnot, K. F. Attwater, H. W. Auerbach, H. W. L. Baartman, F. A. Baker, C. B. Banfield, A. G. Bathurst-Norman, B. G. A. Bell, F. Belway, B. Benzies, A. H. Berg, D. Black, H. P. Blakely, N. S. Boulton, H. Bradley, R. J. Brewer, H. G. S. Broad, D. C. M. Brooks, L. H. Brown, L. G. H. Brown, J. A. Butler, R. M. Cameron, J. P. Cavers, E. G. Chance, R. N. Chandler, W. R. N. Cheetham, D. Christie, F. P. Clapperton, D. M. Clements, W. A. A. Collington, C. H. G. Collins, R. S. Coldrey, C. H. Crosbee, E. J. Crowe, F. J. C. Cunningham, A. H. Curtis, W. K. Dalglish, N. C. Dawber, J. J. Dawe, D. W. Dawson, R. S. De Bruyn, R. C. De Waal, S. R. Dickson, C. P. Dixon, T. St. C. Douglas, H. Duerden, R. H. Edelston, A. G. Edwards, H. V. Ellis, H. Erskine, J. W. D. Farrell, A. B. Fee, A. L. Fiddament, G. Fox-Rule, F. G. Flower, R. F. Freeland, A. P. Freer, G. S. B. Fuller, C. F. Galbraith, C. H. Gannaway, S. H. W. Gibbs, A. Giles, G. Gillbard, K. Y. Gliddon, F. E. Godfrey, H. A. F. Goodison, R. T. Goodyear, H. R. Gould, W. E. Green, B. V. Greenaway, W. J. Greenslade, T. E. A. Griffith, H. C. Grimes, G. C. Grundy, G. W. Habell, B. O. L. Hahn, A. Haigh, E. B. Hakeman, L. C. Hardy, E. L. Hargrave, C. W. Harman, R. H. Harmer, E. R. Harris, G. F. E. Harrison, R. N. Harvey, A. E. Heath, W. A. Hemmings, G. W. Hemsworth, T. Herald, C. S. Hinchliff, E. C. Hull, C. L. Hurst, V. F. Jaynes, A. I. M. Jones, H. E. Jones, H. R. Jones, S. Jones, W. B. Kelly, W. F. Kendall, F. V. Kidson, J. J. M. Lagesse, J. D. Laing, W. I. E. Lane, E. Langston, E. G. Lathan, C. B. H. Lefroy, H. P. G. Leyden, R. E. Lindsay, F. D. Lloyd, H. F. Longbottom, R. Longman, J. Loupinsky, H. W. McCarthy, B. H. McCormack, G. C. McEwan, H. W

Mackintosh, R. W. Maclennan, F. G. Magoun, L. W. Mawbey, R. A. Mayne, C. F. Miller, D. Miller, R. C. Milne, J. W. Milner, F. C. Milner, R. G. Mitchell, J. Montgomery, J. L. Morrison, G. C. Morse, R. Morton, A. McK. Motherwell, J. R. Nickson, H. S. Nolan, F. W. Norris, J. Officer, H. J. Ough, D. J. W. Page, G. S. Page, J. H. Page, A. F. Peacey, G. Pearson, S. G. Pearson, A. L. Penning, J. E. Phillips, L. H. Phillips, L. Phillips, R. T. Pink, C. E. Pither, F. Plummer, J. M. Poe, A. D. Pope, H. S. M. Popplewell, W. W. Rae, G. A. Rainier, C. W. N. Raymond, L. H. Reeve, F. W. P. Reynolds, J. W. Richards, C. J. Richardson, A. E. Rintoul, N. Roberts, C. P. Robertson, D. B. Robertson, B. W. Robinson, V. Rodgers, D. J. Rollo, S. T. Rowe, E. G. Rooks, I. L. Roy, F. C. Russell, G. D. V. Russell, V. R. Y. St. Leger, D. H. Sadler, H. W. Sangway, M. Seaholme, A. D. Shannon, J. S. Sherren, J. C. Sherwin, D. E. B. K. Shipwright, F. E. Short, W. Sidebottom, W. P. Southall, C. W. Sowter, A. V. Speight, A. Spittal, I. O. Stead, M. W. B. Stead, W. L. Stead, G. S. Stewart, R. J. G. Stewart, C. D. B. Stiles, W. A. D. Stone, R. M. Strang, C. B. Stringer, M. de V. Summers, S. J. Swayne, P. Swinfen, S. L. Symondson, R. M. Tate, L. C. Theron, E. P. Thorne, W. F. O. Trench, H. C. Tully, J. V. Turner, J. T. R. Verel, C. I. B. Voge, F. R. Waddington, L. C. Walker, B. A. Walkerdine, H. Walsh, J. P. Waters, G. W. A. Watson, R. Watson, H. R. Watt, A. A. Webster, C. E. Wharton, W. Whitaker, G. T. Williams, T. L. Williams, E. C. Willis. N. P. Willis, R. C. Winn, R. Wilson, W. R. Wood, S. C. Worrall, R. E. York, J. S. Young and G. F. Yuill.

London Gazette Supplement, July 27th.

The following appointments are made :—

Flight Commanders.—From flying officers, and to be Temp. Capts. whilst so employed :—2nd Lt. (Temp. Lt.) R. S. Aitken, R.G.A., T.F. ; July 9th. Temp. Lt. H. A. Tweedie, Gen. List (April 10th, but without pay prior to July 12th).

Flying Officers.—Temp. 2nd Lt. (on prob.) V. Rendle, Gen. List, and to be confirmed in his rank ; March 5th. Temp. 2nd Lt. W. M. Yool, Garr. Bn., North'd Fus., and to be transfd. to R.F.C. Gen. List ; May 28th. Temp. 2nd Lt. J. A. Douglas, Gen. List ; May 29th. 2nd Lt. R. S. Payne, R. Irish R., S.R., and to be seconded ; June 1st. Temp. 2nd Lt. V. I. Olliver, attd. Manch. R., and to be transfd. to R.F.C. Gen. List ; June 4th. Lt. C. Turner, Ind. Army Res. of Off. ; June 5th. Temp. Lt. J. O. Pilkington, Garr. Bn., L'pool R., and to be transfd. to R.F.C. Gen. List ; June 8th. 2nd Lt. F. H. E. Woollett, Lond. R. (T.F.), and to be secd. ; June 12th. 2nd Lt. E. D. Tyzack, R.E. (T.F.) ; June 18th. 2nd Lt. A. B. Cochrane, S.R. ; Lt. P. B. McNally, Canadian Gen. List ; Temp. 2nd Lt. L. A. Hacklett, attd. North'd Fus., and to be transfd. to R.F.C. Gen. List ; June 25th. Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—S. C. Sillem ; June 25th. C. J. Fowler, J. W. D. Needham ; June 29th. 2nd Lt. (on prob.) E. B. Hedley, S.R. Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—G. C. Hughes, C. F. Pritchard, R. A. Phillips ; June 30th. 2nd Lt. H. Munden, Som. L.I., from a Flying Officer (Observer) ; July 2nd, seniority August 10th, 1916. Lt. W. D. Chambers, Canadian A.S.C. ; July 4th. Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—T. F. Hosking ; July 4th. B. G. Poole, S. W. Randall, F. E. Davis, C. L. Turnbull, A. R. Turpin, W. M. Blackie ; July 6th. 2nd Lt. R. H. Martin, R. Muns. Fus., from a Flying Officer (Observer) seniority May 15th, 1916, and to be secd. Temp. 2nd Lt. (on prob.) W. T. Edwards, Gen. List, and to be confirmed in his rank. Capt. O. C. W. Johnsen, R.F.A. (T.F.), and to be secd ; July 7th. Temp. Capt. C. H. Brewer, Bedf. R., from a Flying Officer (Observer), seniority July 20th, 1916. 2nd Lt. (on prob.) J. A. Paull, S.R. ; Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—W. A. Barnett, E. O. Peel ; July 8th.

Assistant Instructors in Gunnery.—(Graded as Equipment Officers, 3rd Class). —2nd Lt. E. V. Maclean, R.F.A. (T.F.), a Flying Officer (Observer) ; June 23rd. 2nd Lt. A. H. Edwards, Middx. R. (T.F.), and to be secd. ; July 5th.

Equipment Officers, 2nd Class.—2nd Lt. (Temp. Lt.) W. J. King, N. Staff. R., from an Assistant Instructor (graded as an Equipment Officer, 2nd Class), and to retain his temp. rank while so employed ; July 3rd, seniority February 14th. 3rd Class.—Temp. 2nd Lt. (on prob.), Gen. List, and to be confirmed in their ranks :—W. A. Downie ; May 1st. W. W. Foster ; May 5th. L. A. Mudge ; May 8th. 2nd Lt. R. P. Graham, High. L.I. (T.F.), and to be secd. ; May 15th. Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—H. F. Unwin ; May 16th. J. T. Vernon ; June 5th. 2nd Lt. F. Leach, Manch. R. (T.F.), and to be secd. ; June 18th. 2nd Lt. (on prob.) W. H. Stirling, S.R. ; June 29th ; 2nd Lt. A. S. Barnfield, Yeo. (T.F.), and to be secd. ; July 2nd. 2nd Lt. J. W. Antcliffe, Lan. Fus. (T.F.), and to be secd. ; July 7th ; Temp. 2nd Lts. (on prob.), Gen. List, and to be confirmed in their rank :—E. E. Jolly ; July 7th. J. B. Daniels ; July 10th. C. A. Perry ; July 11th. F. A. Mills ; July 12th.

General List.—To be Temp. 2nd Lts. (on prob.) :—J. N. Galwey, late Flight Sub-Lt., R.N.A.S. ; June 29th. E. F. Dixon ; July 5th. H. Stokes, Pte. W. Z. Grandi, from R.W. Fus., Hon. 2nd Lt. E. J. Girdler, late 2nd Lt. R. Berks R. ; July 27th.

Schools of Military Aeronautics.

Chief Instructor.—(Graded as a Squadron Commander).—Temp. Capt. H. C. Wakefield, Gen. List, a Flight Commander, and to be Temp. Maj. while so employed, vice Capt. (Temp. Maj.) A. H. Jackson, Notts. and Derby R. ; July 5th.

Assistant Instructors.—(Graded as Equipment Officers, 2nd Class).—Lt. R. O. C. Bush, R. Dub. Fus., an Equipment Officer, 3rd Class ; June 14th. 2nd Lt. S. McClure, N. Staff. R., S.R., to be Temp. Lt. while so employed, and to be secd., vice 2nd Lt. (Temp. Lt.) E. M. A. Van-der-Meersh, S.R., who reverts to Equipment Officer, 3rd Class, and the rank of 2nd Lt. ; July 1st. Lt. E. W. Vaughan, S.R., an Equipment Officer, 2nd Class ; July 3rd, seniority June 1st.

London Gazette Supplement, July 28th.

Attached to Headquarter Units.

Brigade Commanders.—From Group Comders., R.F.C., and to be Temp. Brig.-Gens. whilst so employed : Major (Temp. Col.) H. C. T. Dowding, R.A. ; Bt. Major (Temp. Col.) P. L. W. Herbert, Notts and Derby R. ; June 22nd.

The undermentioned appointments are made :—

Staff Officers, 1st Class (graded for purposes of pay as Acting Adjutant-Generals, and to be Temporary Lieutenant-Colonels whilst so employed).—Capt. N. J. Gill, M.C., R.A., from the 2nd Cl. ; Lieut. (Temp. Capt.) F. C. Shelmerdine, Res. of Officers, from the 2nd Cl. ; June 22nd. Major A. L. Godman, D.S.O., York. R., from a Brig. Major ; July 16th.

2nd Class (graded for purposes of pay as Brigade-Majors).—Temp. Capt. V. W. Brown, M.C., Gen. List, from the 3rd Cl. ; Lieut. (Temp. Capt.) T. E. Longridge, A.S.C., from Adjt., and to retain his temp. rank whilst so employed ; June 22nd.

Squadron Commanders.—From Flight Comdrs., and to be Temp. Majors whilst so employed : Lieut. (Temp. Capt.) S. W. Smith, R.A. ; Mar. 12th. Capt. S. Grant-Dalton, D.S.O., York R., but without pay or allowances prior to June 26th ; Capt. A. R. Stanley-Clarke, M.C., Dorset R. ; May 1st. Capt. R. A. Archer, M.C., R.A. ; 2nd Lieut. (Temp. Capt.) R. J. Mounsey, Hamps. R. ; July 1st.

Flight Commanders.—From Flying Officers, and to be Temp. Capts. whilst so employed : Temp. Lieut. R. M. Drummond, Gen. List ; May 25th. Lieut. O. M. Sutton, S. Lan. R., Spec. Res. ; July 10th.

Flying Officer.—Temp. 2nd Lieut. (on prob.) H. A. Milnes, Gen. List, and to be confirmed in his rank ; May 25th. Temp. 2nd Lieut. F. St. K. Anderson, Gen. List ; June 18th. Lieut. E. H. Marsden, R.F.A., Spec. Res. ; July 7th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank : A. W. Edwards, R. P. Fenn, L. S. Latham, S. L. Wilcox ; July 9th.

Flying Officers (Observers).—Temp. 2nd Lieut. (Temp. Lieut.) V. C. Roberts, North'd Fus., seniority May 23rd, 1916, and to be transfd. to R.F.C., Gen. List ; Temp. 2nd Lieut. J. B. Jameson, R. Fus., seniority Mar. 6th, and to be transfd. to R.F.C., Gen. List ; 2nd Lieut. R. B. Ashcroft, Notts. and Derby. R., Spec. Res., seniority Mar. 10th, and to be secd. ; Temp. 2nd Lieut. A. T. Miller, High. L.I., seniority Mar. 30th, and to be transfd. to R.F.C., Gen. List ; July 7th. Temp. 2nd Lieut. A. Sleep, Gen. List, from a Flying Officer ; Temp. 2nd Lieut. A. A. Bathurst, W. Rid. R. ; July 7th, seniority Mar. 31st. Lieut. W. L. Rutledge, Canadian Inf. ; July 7th, seniority April 22nd. 2nd Lieut. M. O. Prismall, R.F.A., Spec. Res., seniority Feb. 28th. Temp. Lieut. J. E. Rosselli, A.S.C., seniority Mar. 16th, and to be transfd. to R.F.C., Gen. List ; Temp. 2nd Lieut. R. W. Rose, M.G. Corps, seniority Mar. 18th, and to be transfd. to R.F.C., Gen. List ; Lieut. P. G. Cameron, R.A., seniority Mar. 21st, and to be secd. ; July 8th. 2nd Lieut. H. P. Gardner, Norf. R., Spec. Res., seniority April 3rd, and to be secd. ; 2nd Lieut. J. Tennant, M.C., Cam'n Highrs., T.F., seniority April 21st, and to be secd. ; Lieut. A. H. Hinton, Canadian Art., seniority April 28th ; July 7th. Temp. 2nd Lieut. (on prob.) T. M. Webster, Gen. List, and to be confirmed in his rank ; July 8th, seniority May 16th. Lieut. E. G. Rowley, Canadian Inf. ; July 5th, seniority May 17th. 2nd Lieut. J. C. Bell, Lond. R., T.F., from attd. Worc. R., T.F., seniority May 25th, and to be secd. ; 2nd Lieut. M. J. P. Scully, R. Innis. Fus., seniority May 31st, and to be secd. ; Temp. 2nd Lieut. (on prob.) L. M. Nava, Gen. List, seniority June 11th, and to be confirmed in his rank ; Capt. J. W. Higgins, R.F.A., T.F., and to be secd. ; July 8th, seniority June 11th ; July 7th.

Balloon Officers.—Temp. 2nd Lieut. (on prob.) G. F. Langford, Gen. List, and to be confirmed in his rank ; June 16th. Major G. T. J. Barry, S. Wales, Bord. ; Temp. 2nd. Lieuts. (on prob.), Gen. List, and to be confirmed in their rank : A. J. Anderson, H. Illingworth ; June 29th.

Special Appointments (graded as Park Commanders).—From Equipmt. Officers 1st Cl., and to be Temp. Majors whilst so employed :—June 22nd : Lieut. (Temp. Capt.) G. S. Peacock, Spec. Res. ; Temp. Capt. N. F. D. Buckeridge, Gen. List ; Lieut. (Temp. Capt.) G. L. Main, Spec. Res.

Equipment Officers, 1st Class.—From the 2nd Cl., and to be Temp. Capts. whilst so employed :—June 26th : Temp. Lieut. F. C. O. Shaw, Gen. List ; Temp. Lieut. G. E. Morris, Gen. List.

2nd Class.—From the 3rd Cl. :—June 26th : Temp. Lieut. F. N. Downey, Gen. List ; Temp. Lieut. H. A. Whelen, Gen. List ; Temp. Lieut. H. L. Crichton, Gen. List. And to be Temp. Lieuts. whilst so employed : 2nd Lieut. F. R. Wilkins ; Temp. 2nd Lieut. B. W. M. Williams, Gen. List ; 2nd Lieut. T. A. Peddell, Spec. Res. ; June 30th. Temp. 2nd Lieut. (on prob.) W. W. Foster, Gen. List, and to be confirmed in his rank ; July 2nd.

3rd Class.—2nd Lieut. A. Chapple, Spec. Res. ; May 9th. Temp. 2nd Lieut. (on prob.) W. W. Sayer, Gen. List, and to be confirmed in his rank ; May 30th.

General List.—The following to be Temp. 2nd Lieuts. (on prob.) : A. B. Carmody, L. S. Punnett, J. M. Purcell, E. B. Booth, A. M. Clermont, A. H. Cocking, F. M. Ward, S. W. Taylor, A. R. McCallum, J. A. Stewart, R. E. Stewart, O. Thamer, N. R. McCord, G. H. Harding ; June 5th. Actg. Staff Sergt. C. L. Taylor, from A.S.C. ; July 12th.

Memoranda.—Bt. Lieut.-Col. (Temp. Brig.-Gen.) J. M. Salmond, C.M.G., D.S.O., R. Lanc. R., to be Temp. Major-Gen. whilst comdg. a Training Brigade, R.F.C. ; June 22nd.

London Gazette Supplement, July 30th.

The following appointments are made :—

Flight Commanders.—From Flying Officers, and to be Temp. Capts. whilst so employed : Temp. Lieut. A. N. Solly, Gen. List ; 2nd Lieut. (Temp. Lieut.) A. T. Rickards, R.A. ; July 12th. 2nd Lieut. J. Noakes, Temp. 2nd Lieut. J. D. Atkinson, R.E. ; July 13th. 2nd Lieut. A. S. Shepherd, Spec. Res. ; July 15th. Temp. Lieut. G. K. Smith, Gen. List ; July 17th.

Flying Officers (Observers).—Temp. 2nd Lieut. F. Waller, Bord. R., and to be transfd. to R.F.C., Gen. List ; July 12th, seniority Oct. 22nd, 1916. Temp. 2nd Lieut. J. G. Walser, M.C., R.A., seniority Feb. 10th, and to be transfd. to R.F.C., Gen. List ; 2nd Lieut. W. L. Yorath, L'pool R., T.F., seniority April 3rd, and to be secd. ; July 13th. 2nd Lieut. (Temp. Capt.) F. B. Ransford, A. Cyclist Corps ; Temp. Lieut. A. F. Britton, M.G. Corps, and to be transfd. to R.F.C., Gen. List ; Temp. 2nd Lieut. O. M. Hills, M.C., Ches. R., and to be transfd. to R.F.C., Gen. List ; July 12th, seniority May 4th. Lieut. E. A. Plamondon, Canadian Pioneer Train Depôt ; Lieut. D. L. Burgess, Canadian Inf. ; July 12th, seniority May 31st. Temp. Lieut. E. L. Pollard, M.C., S. Staff. R. ; July 11th, seniority Feb. 22nd. Lieut. A. C. M. Pym, Lrs., Spec. Res. ; July 6th, seniority April 27th. Temp. 2nd Lieut. (on prob.) A. R. Gibson, Gen. List, seniority May 9th, and to be confirmed in his rank ; Lieut. R. McK. Madill, Canadian Inf., seniority May 31st ; July 9th.

Balloon Officers.—2nd Lieut. (Temp. Lieut.) R. A. Greenwell, R.F.A., T.F., and to be secd. ; Temp. Lieut. C. W. Pallister, R.A., and to be transfd. to R.F.C., Gen. List ; 2nd Lieut. G. Henderson, R.F.A., T.F., and to be secd. ; 2nd Lieut. S. E. Backus, R.F.A., Spec. Res. ; July 12th.

Equipment Officers, 2nd Class.—2nd Lieut. (Temp. Capt.) J. P. Rowell, spec. Res., to revert from the 1st Cl., to reliquish his temp. rank, and to be Temp. Lieut. whilst so employed ; July 6th, seniority April 26th, 1916.

3rd Class.—2nd Lieut. A. T. Hawkins, Spec. Res. ; April 24th.

School of Wireless Operators.

Instructor (graded as an Equipment Officer, 2nd Class).—2nd Lieut. F. Murphy, Spec. Res., an Equipment Officer, 3rd Cl., and to be Temp. Lieut. whilst so employed ; July 10th.

Supplementary to Regular Corps.—2nd Lieut. B. Gaskin resigns his commn. ; July 31st. 2nd Lieuts. (on prob.) are confirmed in their rank : A. T. Hawkins, W. A. Campbell, K. L. Mackenzie, A. N. Baker, W. R. A. Campbell, J. A. Paull, A. S. Hunt, J. T. Menzies, C. H. Sharpe. To be 2nd Lieuts. (on prob.) : W. D. Bostock, C. Cox ; Feb. 18th. A. C. Youdale ; Feb. 21st. E. J. Head, P. J. West, G. S. Wilkinson ; Feb. 28th. H. H. Blackwell, J. L. Foubister, D. G. George, K. J. Gould, W. F. Warner ; May 11th.

General List (R.F.C.).—Cadets, to be Temp. 2nd Lieuts (on prob.) : G. I. Hôle, W. Simmonds, D. Alexander, F. Crossley, H. Entwistle, F. Forster, Z. S. Marsh, D. A. Parrott, E. R. Ripley, J. W. D. Smith, A. W. D. Stackhouse ; July 12th. P. J. Bradley, H. F. Lambert ; July 13th. R. M. Langley ; July 16th.

Aeronautical Inspection Department.

London Gazette Supplement, July 27th.

C. C. Bissett to be Temp. Hon. Lt., whilst employed as Assistant Inspector Aeronautical Inspection Dept. ; May 15th.

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A German Aeroplane in Holland.

Het Volk reports that a German aeroplane landed on July 29th near Oostburg, owing to a damaged propeller. The pilot, a naval airman, has been interned.

Expensive Sherry.

A CASK of sherry, pitted with shrapnel in a recent air raid, fetched £1,300 at auction for the Red Cross the other day.

FLIGHT

AVIATION IN PARLIAMENT.

R.F.C. Court-Martial at Hounslow.

MR. JOYNSON-HICKS, in the House of Commons, on July 25th, asked whether the court-martial held at Hounslow on the 19th June on three officers of the Royal Flying Corps has yet promulgated its decision; and, if not, what is the reason for the delay, and have the officers returned to duty?

Mr. Macpherson: I am afraid that I am not able to add anything at present to the answer which I gave my hon. friend on Monday last. On that occasion I said: "I understand that these proceedings have now been promulgated, but I cannot make any definite statement until the proceedings have been returned to the War Office after promulgation. One of the trials resulted in an acquittal; the other officers would return to duty in the usual course after the promulgation of the sentences."

Mr. Joynson-Hicks: In view of the large number of questions I have asked, would the hon. gentleman try and expedite the returns of these courts-martial?

Mr. Macpherson: Certainly, I will do what I can.

Orders for Operations Against Hostile Machines.

MR. CATHCART WASON asked whether officers in command of air and fighting squadrons must obtain permission from the War Office before attacking threatening enemy raiders?

Mr. Macpherson: The answer is in the negative. The War Office takes no executive action in the operations against hostile aircraft.

Mr. Billing: Would the hon. gentleman say exactly who is responsible for giving these orders, because there seems to exist not only in the mind of the public but among the——

Mr. Macpherson: I have made such enquiries as I could, and I understand that it is left to the discretion of the squadron commander to use his own powers. I understand that no executive action is taken by the War Office itself or by the Home Forces headquarters.

Mr. Billing: In the absence of the squadron commander, which is frequently the case, can it be put into the Army Orders that the second in command shall have power to order the machines to attack?

Mr. Macpherson: I should think, from my own knowledge, that that automatically follows.

Official Reports of Raids.

MR. BILLING asked the Prime Minister how many air raids, both by Zeppelin and heavier-than-air machines, have taken place in this country since the outbreak of war; and how many have been officially reported?

Mr. Macpherson: Since the outbreak of war forty-seven airship raids and thirty "heavier-than-air" raids have taken place in this country, making seventy-eight air raids in all. No official *communiqué* was published in the Press with regard to the first six airship raids, up till the middle of May, 1915. Press reports of the fullest character were, however, published. After the middle of May Press reports were forbidden. With regard to the seven following raids, up till the middle of August, Admiralty *communiqués* were published. The next seven raids till the end of 1915 were published through Press Bureau reports. The remaining raids from the beginning of 1916 till the present time have all been published by means of official military reports issued by the War Office or the Field-Marshal Commanding-in-Chief, Home Forces, with the exception of one in which an airship is doubtfully reported as having appeared only for a few minutes over the coast and dropped no bombs.

Of the "heavier-than-air" raids the first two in 1914 were published by means of official *communiqués*. During the first half of 1915 no official *communiqué* was published in the Press with regard to the two raids that occurred, but full Press reports were allowed to be published. The only other raid that occurred in 1915 was published in an Admiralty *communiqué*. The remaining raids in 1916 and 1917 have all been published in military *communiqués* so far as they concern the sphere of action of the Field-Marshal Commanding-in-Chief, Home Forces, and wherever the enemy's activity has actually extended over land.

Mr. Billing: Has any air raid by heavier-than-air machines taken place over this country during the last six weeks which has not been reported?

Mr. Macpherson: I cannot answer that question. I do not know.

Casualties in July 22nd Raid.

MR. BILLING asked the Prime Minister what was the total number of casualties, killed and wounded, among naval, military, and civil in the air raid on Sunday, 22nd July; whether any of our own airmen were brought down by the enemy or otherwise crashed in this country, and, if so, what number; whether any of the enemy aircraft were either shot down or brought down in this country, and, if so, what number; and whether the reconstruction of the air defence of this country had been completed prior to this raid?

Mr. Macpherson: I am informed that the total casualties among soldiers, sailors and civilians caused by the raid of Sunday, 22nd July, were as follows:

Killed	13
Wounded	26

None of our own airmen were brought down by the enemy or crashed in any manner whatsoever. None of the enemy aircraft was shot down or brought down in this country. The last part of the question is not understood. Our air defences are continually being improved, both as regards organisation and equipment.

Mr. Billing: Is the hon. gentleman aware that he made a statement in this House that the air defences of this country were being reconstructed? The question I ask is whether that reconstruction was completed before this air raid took place, when the result, as far as the enemy were concerned, was the same as it was before?

Mr. Macpherson: I answered that part of the question in the last part of my answer.

Public Warnings of Raids.

MR. GILBERT asked what form of warning for enemy air raids in London has now been decided on by the Government; and in what manner it is proposed to make the scheme public?

Sir G. Cave: Warning will be given by signal rockets to be fired from certain fire brigade stations and police stations, as already announced. As a result of the experience gained last Sunday, it is proposed to reduce the number of signals to be fired at each station from three to two, and also to give a signal by whistle or otherwise when all is clear. A police notice will be issued forthwith.

Deaths due to Warning.

MR BILLING asked the Home Secretary whether he has received particulars of the cases of injury and deaths due to shock and other causes directly attributable to the measures the authorities have employed as a means of warning London of approaching danger from enemy aircraft?

Sir G. Cave: The Commissioner of Police reports that three deaths have come to the notice of the police which are attributed in part to fright or shock on public warning being given of impending air raids. One of these occurred on the 14th instant, when the "Take Cover" notices only were used, and two on the 22nd instant when the sound signals were also used.

An Unexploded Bomb.

SIR GEORGE TOUCHE asked the Under-Secretary of State for War if his attention has been called to the incident of an unexploded bomb which fell in the air raid of July 7th and embedded itself where it has lain ever since; that several visits have been paid by the authorities to the place in question; that at the latest visit the officer appeared to think the shell might be left where it is; that its presence causes anxiety to the wife and daughter of the resident in the house, who do not appreciate its harmlessness; will he state whether it is a German or a British shell; why it has not been taken away earlier; and will he cause its removal?

Mr. Macpherson: I am enquiring into the incident referred to in my hon. friend's question, and will inform him of the result as soon as possible.

Alien Enemies at Aerodromes.

SIR H. DALZIEL, on July 26th, asked the Home Secretary whether in the public interest he will consider the advisability of now proclaiming the vicinity of aerodromes as a prohibited area so far as German-born persons are concerned?

Sir G. Cave: I am in consultation with the Admiralty and Army Council as to the desirability of taking steps under the Aliens Restriction Order for prohibiting any alien enemy from residing in the vicinity of an aerodrome, but such a prohibition (if issued) would affect aliens only, and not British subjects of enemy origin. These persons, if they are suspect, can be removed from any area by order of the naval or military authority under Article 14 of the Defence of the Realm Regulations.

The Supply of Silver Spruce.

SIR H. DALZIEL asked the Minister of Munitions whether he is aware that large manufacturers of aeroplanes in Great Britain absolutely refuse to use any of the Government's stock of silver spruce, on the ground that it is for the most part rubbish; whether he is aware that only a few days ago a parcel of silver spruce from Government stocks was examined by the foreman of a big Midland aeroplane builder, of which only 20 per cent. was found suitable and the balance was returned; and can he say who is responsible for passing inferior wood?

Sir W. Evans: The answer to the first part of the question is in the negative. It is true that a large proportion of a parcel of silver spruce from Government stock was found unsuitable, and that the balance was returned. This was due to the fact that the timber had been dispatched before the present system of inspection was instituted.

Royal Flying Corps and Leave.

MR. WATT asked the Parliamentary Representative of the Air Board whether a Regulation will be issued or some arrangement made dealing with the officers and men of the Flying Corps who have just undergone their training and are ready to be sent abroad for service, whereby a rest of four, seven, or fourteen days would be given to each man before being sent abroad, so that he might have an opportunity by recuperating his health of becoming of more efficient service when sent to the various fronts?

Mr. Macpherson: It is not always possible in view of the exigencies of the service to give pilots four days' leave just prior to their proceeding overseas But to ensure pilots not proceeding to the front without leave it is given to them, as far as possible, during their training—generally four days. The arrangements as regards men is that they are given at least four days' leave when the exigencies of the service permit.

Mr. Watt: Is it not the opinion of the Department that these men will do better service when they arrive out there if they get leave?

Mr. Macpherson: Such leave as can be given is granted.

Air Raid and Street Casualties.

SIR STUART COATS asked the Secretary of State for the Home Department if he will supply the complete figures of those killed and injured in hostile air raids and in street accidents in the London Metropolitan area from the commencement of the war to date?

The Secretary of State for the Home Department (Sir G. Cave): The figures are as follows: Killed in air raids, 366; killed in street accidents, 2,412; injured in air raids, 1,092; injured in street accidents, 70,863. These figures include all persons killed and injured in air raids in the Metropolitan Police district and the City of London up to the present date. The figures of street accidents are given up to June 30th in the Metropolitan Police district and to the 22nd inst. in the City of London, these being the latest dates for which figures are available.

Warning in East Coast Towns.

SIR H. DALZIEL asked the Home Secretary whether, on the occasion of last Sunday's air raid on the East Coast towns, the warning that enemy aeroplanes were about was not given at Ipswich or Felixstowe until the bombardment was all over; and, if so, whether he will make enquiries as to who is responsible for this neglect?

Sir G. Cave: I understand from the police that at Felixstowe the usual warning to the public could not be given before the bombardment took place owing to the shortness of the interval after the enemy were first sighted. As to Ipswich, I am making enquiries.

Instructions to Flying Officers.

SIR HENRY DALZIEL asked the Under-Secretary of State for War whether in view of the importance of our airmen getting up in the air as speedily as possible on the approach of enemy machines, they are constantly kept below waiting for orders from a distant authority; and, if so, whether he will at once give instructions for the officers at the various aerodromes when a raid is in progress to act on their own initiative?

The Under-Secretary of State for War (Mr. Macpherson): The answer to both parts of my right hon. friend's question is in the negative.

Hendon Acceptance Park.

MR. GEORGE FABER asked the Under-Secretary of State for War whether a number of German prisoners were recently employed in work at the Hendon aeroplane acceptance park; whether, in the course of their employment, they were allowed to approach within a short distance of aeroplanes situated there; and whether he will take steps to see that, in view of the danger of any such arrangement, German prisoners shall not be employed at aerodromes, or air sheds, or aeroplane works, or anywhere near them?

Mr. Macpherson: German prisoners were employed on returfing and road building, under a guard, at Hendon on the occasion mentioned. No prisoner was less than 300 yards from the nearest aeroplane. As I explained in answer to the hon. member for Hertford on the 20th inst., the employment of German prisoners on work of this character and on the construction of aerodromes and sheds or enlargements of existing establishments has been found necessary in cases where civil labour is scarce or difficult to procure, in order not to delay the completion of urgent services, but I am assured that proper precautions are taken to prevent their approaching aeroplanes or working sheds.

Mr. Faber: Did this work on which the German prisoners were employed take place shortly before the air raid on London on July 7th?

Mr. Macpherson: As I have stated in my answer, these men were employed on returfing and road building on the occasion mentioned.

Mr. Faber: On what date?

Mr. Macpherson: On the date mentioned.

Mr. Faber: I did not mention any date. When were these men employed at the place mentioned in my question?

Mr. Macpherson: I think I am safe in saying that they were employed some time during this month.

Mr. Faber: I am perfectly satisfied, if the hon. gentleman gives me an answer, to take it as decisive. Does he know?

Mr. Macpherson: I cannot exactly say. The answer which I have given says "on the occasion mentioned." I presume that my hon. friend refers to the occasion when the air raid took place.

Mr. Faber: Is not that really toying with the question and playing with the House? I said "recently employed" in the question.

Mr. Macpherson: I may answer my hon. friend by saying that they were employed recently.

R.F.C. Casualties.

MR. P. BILLING asked the Under-Secretary of State for War what are the total losses of killed, wounded and missing among the R.F.C. during the month ended July 21st; and what were the total losses during the previous month?

Mr. Macpherson: These figures cannot be stated in public, but, as I have told hon. members before, if any individual member of the House cares to go to the War Office he will be shown the figures.

Range Finders.

MR. BILLING asked the Under-Secretary of State for War whether, at a certain northern anti-aircraft base, where there are 12 French 75 anti-aircraft guns, they have no range-finder of any description whatsoever; whether, even in cases where range-finders are provided, the instruments measure yards, whereas both the range dial of the gun and the fuse punch register are in metres; whether the officers or men responsible are qualified to transform metres to yards, or *vice versâ*, with rapidity; or whether this is any way responsible for the failure of our guns in recent raids?

Mr. Macpherson: It was not in the public interest that this question should have been put, and I cannot give any answer to it.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters, July 17th.

"Although handicapped by thick clouds and strong winds, our aeroplanes carried out a great deal of successful work yesterday in conjunction with our artillery, and, in addition, our raiding machines dropped a large number of bombs on various points of military importance behind the enemy's lines. In the evening many fights took place in the air, as the result of which six enemy aeroplanes were brought down, one of which was forced to land in our lines, and three others were driven down out of control. None of our machines are missing."

General Headquarters, July 18th.

"Owing to the clouds there was little aerial activity yesterday until the evening, when a number of combats took place, in two of which large formations were engaged with on each side. In the course of the fighting eight German aeroplanes were brought down and six others were driven out of control. Another enemy machine was shot down by fire from the ground. Four of our machines are missing."

War Office, July 19th.

"*Salonica.*—Our aeroplanes have bombed Marinopolje and Vetrina (Upper Struma Valley), Savjak (south of Demir Hissar) and Angista Station.. Near Angista a hostile machine was brought down in flames."

General Headquarters, July 21st.

"Four German aerodromes were successfully bombed yesterday by our aeroplanes, and bombs were also dropped on an important enemy railway junction, causing a large explosion. There was much fighting in the evening. Three hostile machines were brought down and six others were driven down out of control. Four of our aeroplanes are missing."

General Headquarters, July 22nd.

"Yesterday thick haze interfered with activity in the air until the evening, when many fights took place. Two German aeroplanes were brought down by our machines and four others were driven down out of control. In addition, one German observation balloon was brought down in flames. One of our aeroplanes is missing."

General Headquarters, July 23rd.

"Yesterday there was great aerial activity on both sides, and fighting took place continuously from dawn to dark. Visibility was excellent. Much successful work was accomplished by our aeroplanes in co-operation with our artillery. Over three tons of bombs were dropped by us on the enemy's aerodromes, ammunition dumps, and railway sidings, and good results were observed. Nine German machines were brought down in combat, including one brought down in the sea when endeavouring to return from England, and four other enemy aeroplanes were brought down out of control. In addition, one enemy machine was shot down out of control by our anti-aircraft guns, and one hostile observation balloon was brought down in flames. Nine of our aeroplanes are missing."

War Office, July 23rd.

"*Salonica.*—On the same day our aeroplanes bombed Demir-Hissar and the neighbouring village of Puljovo."

General Headquarters, July 24th.

"Great activity on the part of our aeroplanes continued yesterday, and much successful work was again accomplished in co-operation with our artillery. Over four tons of bombs were dropped by our raiding squadrons on the enemy's aerodromes, ammunition depôts and railway junctions. Fewer German aeroplanes were encountered and fighting was not so severe. Three hostile machines were brought down, and three others driven down out of control. None of ours are missing."

General Headquarters, July 25th.

"Yesterday's thick haze interfered greatly with operations in the air. Bombing raids were none the less carried out by our aeroplanes during the day, as well as during the previous night.

"Fighting took place in the evening, and four German machines were driven down out of control. Three of our machines are missing."

War Office, July 26th.

"*Salonica.*—Our machines have bombed Porna station camps near Seres and Demirhissar, the depôt at Petric, and Dedeli (north-west of Lake Doiran)."

General Headquarters, July 26th.

"Owing to the thick mist there was little activity in the air yesterday. One German machine was brought down in air fighting. One of our machines is missing."

General Headquarters, July 27th.

"Little flying was possible yesterday until the evening, when sharp fighting took place for about two hours. One hostile machine was brought down and one other driven down out of control. Two of our machines are missing."

General Headquarters, July 28th.

"Yesterday morning aerial activity was slight, but from 1 p.m. till dark it became very great. The fighting was intense, and the day proved a markedly successful one for our airmen. The vigorous offensive tactics employed enabled our artillery machines to carry out their work successfully during the day, and made it possible for us to take an unusually large number of photographs. Our bombing squadrons, moreover, carried out many raids, and bombed four of the enemy's aerodromes. Some of our machines came down to very low altitudes at a distance of over 40 miles behind the enemy's lines. Fifteen German machines were crashed to the ground and 16 others driven down out of control. Three of our machines are missing."

General Headquarters, July 29th.

"Yesterday there was again great activity in the air and fighting was continuous. On the night of the 27th-28th inst. important railway stations and two hostile aerodromes were bombed by our aeroplanes, and during the day a number of other bombing raids, as well as much photographic and artillery work, were carried out by us with success. In air fighting 16 German machines were brought down, and 14 others were driven down out of control. In addition two hostile observation balloons were brought down in flames. Thirteen of our machines are missing."

General Headquarters, July 30th.

"On the night of the 28th-29th inst. bombs were dropped by our aeroplanes on a German aerodrome, two important railway stations and an ammunition depôt, where fires and explosions were caused. Bombing operations were continued yesterday, and there was great activity in the air until 10 a.m., when a severe and sudden thunderstorm prevented further flying. Many of our aeroplanes were caught in the storm, and four have not returned. In air fighting four German aeroplanes were brought down and two others were driven down out of control. Six of our machines are missing, including those lost in the storm."

French.

Paris, July 18th.

"*Salonica.*—British airmen bombarded the station of Angista."

Paris, July 20th.

"*Salonica.*—British airmen dropped bombs on the enemy depôts at Petric, causing fires."

Paris, July 21st.

"Between July 11th and 20th five enemy aeroplanes were brought down by our pilots, and in addition 11 hostile machines were driven down out of control in their own lines."

Paris, July 22nd.

"*Salonica.*—British airmen have bombarded the motor car park at Demirhissar. During the day's air fights two enemy machines were brought down."

Paris, July 24th.

"Last night enemy aeroplanes dropped several bombs on the town of Nancy and on the region south of that place. There were no casualties.

"The Allied airmen bombarded successfully enemy encampments in the region of Demirhissar and Staravina."

Paris, July 28th.

"*Salonica.*—British airmen bombarded the enemy's encampments in the region of Rupel. There have been artillery activity in the Majadag region and patrol encounters on the Serbian front."

Belgian.

Havre, July 29th.

"A *coup de main* attempted by the Germans on our advanced trenches north of Dixmude was repulsed, and serious losses were inflicted on the enemy.

"Our airmen, whenever the weather was favourable, have displayed very great activity. Three enemy aeroplanes were brought down, one of them falling a few yards from our advanced trenches."

Russian.

Petrograd, July 20th.

"Near Dvinsk, one of our aeroplanes, in charge of Lieut. Tsirniladze, attacked by an enemy machine, was forced to descend in our territory. Lieut. Tsirniladze was slightly wounded. The machine received five holes."

Petrograd, July 21st.

"In the Carpathians, a German aeroplane was brought down by our fire and its occupants were made prisoners."

Petrograd, July 28th.

"Enemy aeroplanes made a flight over the railway station of Molodeczno, dropping five bombs upon the hospital camp near the station. A physician was killed, and a nurse, a priest, and a boy were wounded. In the region to the south-east of Baronoviczy a German observation balloon was burnt by one of our aeroplanes."

Petrograd, July 30th.

"In the Baltic Sea, on Friday, an enemy Zeppelin, while flying over the island of Aland, dropped 20 large bombs on the town of Tornby, near Mariehamn. The Zeppelin was fired at by the guns of the fleet, as well as by the shore batteries, in the Gulf of Riga. Squadrons of enemy hydroplanes carried out raids in the neighbourhood of the islands of Zerel and Arensburg. Fired at by the fleet and the shore batteries, the machines disappeared after dropping about 20 bombs without effect. A squadron of enemy aeroplanes in the same district attacked one of our destroyers, dropping eight bombs without effect.

"Our fire brought down a German aeroplane, which fell in flames west of Stekhnikovce (west of Zboroff)."

Italian.

Rome, July 18th.

"Aerial activity was considerable along the whole front. Two enemy machines were brought down by our airmen. One fell east of Mt. S. Daniele and the other at Lom (south of Tolmino). One of our aeroplanes was obliged to land within our own lines."

Rome, July 19th.

"The aerial activity was intense along the whole of the front. One enemy machine was brought down in an air engagement, and fell near Asiago."

Rome, July 21st.

"One of our gallant airmen attacked a squadron of five enemy machines above Oppacchiasella [Carso], bringing down two, one of which fell in flames in our lines."

Rome, July 23rd.

"Last night, notwithstanding difficult atmospheric conditions and the enemy's defence, our aeroplanes effectively bombed enemy batteries on Mount Hermada and the railway works on the Opsina-Gabrovica line."

Rome, July 24th.

"Two of our bombing flights, accompanied by chasing planes, carried out a bombing raid on hutments and railway works at San Daniele on the Carso. In spite of the enemy's violent anti-aircraft fire the operation was carried out successfully. All our machines returned to their bases."

Rome, July 26th.

"Along the whole front normal artillery and reconnoitring patrol activity is reported. During the night of the 25th an isolated attack of the enemy south-west of Kostanjevica was broken up by our fire. Last night one of our airships paid a surprise visit to S. Lucia (Tolmino), and dropped a ton of high explosives on the railway works, doing considerable damage."

Rome, July 28th.

"The air services were active along the whole front. On the evening of the

27th one of our airships effectively bombed the railway between S. Lucia (Tolmino) and Pazza di Modrea, and the Opcina military works were damaged by our aeroplanes. This morning a large flight, with an escort of chasers, dropped nearly 3 tons of high explosive on the electric power station at Idria and on hutments in Chiapovano Valley."

Rome, July 29th.

"Yesterday evening one of our large bombardment air squadrons, escorted by chasers, again raided the military establishments at Idria and the hutments in the Chiapovano Valley, and, notwithstanding heavy fire from the enemy's anti-aircraft guns, dropped four tons of high explosives. On the return journey the chasers brilliantly engaged a large number of enemy machines which had risen, and, after having brought down two, returned safely to their base, which the battleplanes had already succeeded in reaching."

Rome, July 29th.

"On July 27th some enemy hydroplanes attacked Grado and dropped 10 bombs. As a reprisal for this, at dawn next day our hydroplanes dropped bombs on the enemy's hangers at Prosecco, and returned undamaged. The same morning the enemy delivered an air atack on Termuli, and dropped four bombs, causing slight damage to houses, and injuring four persons. One of their aeroplanes when leaving dropped a bomb in the sea near the island of Tremiti. Our machines immediately went in pursuit and eagerly followed the enemy for a long way, but eventually had to give up the chase on account of a thick fog and clouds, and all returned to their bases.

"On Saturday evening enemy hydroplanes repeated their attack on Grado and towards Cervignano, returning to Trieste after dropping a few bombs without effect."

Rome, July 30th.

"On the Julian front air activity was considerable."

Serbian. *Salonica, July 23rd.*

"Last night enemy patrols were repulsed near Staravina. Our airmen brought down an enemy aeroplane, which fell in our lines near Kapignani. They also dropped 32 bombs on Kravica and Gradesnitza."

German. *Berlin, July 17th.*

"In addition to five aeroplanes, four enemy captive balloons were brought down by our aviators.

"During the forenoon on July 14th our naval seaplanes near the Hoofden Bank attacked a number of merchant vessels escorted by destroyers. It was definitely observed that two destroyers were struck by two direct bomb hits each. One lighter was also struck by direct hit."

[It is officially announced that none of the vessels referred to in the Berlin *communiqué* was hit or damaged.]

Berlin, July 23rd.

"Our captive balloons, which are indispensable for directing artillery fighting, were along the whole front the object of futile enemy long-range fire. East of Ypres they were also made the object of a combined attack by several aerial squadrons. Our battle airmen and anti-aircraft guns rendered these aerial attacks abortive. The captive balloons were undamaged. Eight enemy aeroplanes were shot down."

Berlin, July 28th.

"During the course of numerous engagements the enemy lost 13 aeroplanes."

Berlin, July 29th.

"Aerial activity was extraordinarily lively, especially on the Flanders front. Thirty-five enemy airmen were shot down. Upper-Lieut. Dostler, at the head of a pursuing squadron, destroyed a squadron of six enemy aeroplanes, and himself gained his 20th aerial victory. Upper-Lieut. Ritter von Tutschek shot down his 19th and 20th aerial opponents in battle."

Berlin, July 30th.

"The enemy lost 10 aeroplanes in aerial battles. First Lieut. Ritter von Tutschek brought down his twenty-first opponent."

CORRESPONDENCE.

The Future of the Air Service.

[1939] I sent you my views on the future of flight recently, and herewith attach further views on the future of the Air Service.

I entirely agree with the views expressed in your leading articles on this subject, differing only in that I do not see the necessity for separate small services for navy and army. Were it in my power I would at once convert the present unorganised services into one complete service. Regarding the future of an air service serving this country, there can be, logically, sentimentally and practically, but one opinion. The various fighting forces in the world consist of armies (land-forces) and navies (sea-forces). Each of these services is entirely independent and conducts its own affairs. The essential difference between the two services lies in the element in which they work. The air service of the future has its own element—the air—and by virtue of this essential difference in its basic conditions from either army or navy, it must be a separate, independent and distinct force. There is no reason that can be brought against the establishment of a separate air service.

Such a service will have its own training establishments, where education will be given in aerial matters from an early age. Such matters will include aerial navigation, practical engineering, aerial observing, gunnery, meteorology, photography, wireless telegraphy, elementary electricity, signalling, spotting for either naval or military gunners, general knowledge of military evolutions, and recognition of naval craft, &c., the training being similar to that obtaining in a naval training school, but eliminating the many naval subjects not required by airmen. Boys would be brought into the service at the age of 12, and trained up to at least 18 years of age. At the conclusion of their training they would be capable of working with either navy or army, or entirely with their own service as might be required. Their training would have included the various evolutions of armies, artillery spotting, &c., and would have included also the recognition of various types of naval craft, spotting for naval gunnery, &c.

The air service in its two present branches is a hastily born child. It can only last for the immediate present, with its present manner. It is growing at a rate beyond knowledge of either navy or army, and must in a short time completely overshadow both.

The only real invention since the making of the first wheel must as completely revolutionise the established navy and army as the whole thought and life of the world.

All land locomotion may roughly be summarised as faster progression on wheels—there is no other essential difference from the first wheel ever made; all water locomotion is a faster propulsion of the original coracle. The air has been invaded only since 1900.

"ENGINEER OFFICER."

A Grim Story.

FROM a letter received by a relative of Lieut. G. Garrood it is evident that not all the perils of an aviator, detailed for duty in East Africa, have to do with the air. He says that "once when he went out to bomb a German ambush on the Rufiji River, and engine trouble landed him in a bog with a broken propeller, it took him four days to make his way to a place of safety through the bush infested with wild animals. In the dusk he was confronted with an ugly black animal about 4 ft. high, with vicious tusks. He climbed a tree and prepared to put in the night there. Later he opened his eyes and saw something like two green electric bulbs about 30 ft. from the tree. They moved round it in a circle. This continued for 45 minutes.

"The tension was unbearable. I wanted to scream, shout, and yell all in one, but instead I burst out with 'The Admiral's Broom,' and with a full-throated bass I roared out the three verses. No applause, but a reward—the leopard slunk away. Why had I not thought of it before?

"I went through my repertoire. I laughed as I finished 'Two Eyes of Grey.' It seemed so ridiculous. Then I got on to hymns, remembered four verses of 'O God, our help in ages past,' and sang the 'Amen,' too. The whole thing had its ludicrous side."

Next morning whilst swimming a river he passed seven yards from a crocodile's mouth, but just reach the bank in time. Without food or arms—his only weapon of defence his nail scissors—his progress through the awful bush was about 100 yards an hour. His clothing was in ribbons, and his flesh exposed to the thorns, sword grass and flies.

He swam seven more rivers that day and sank down exhausted against a tree. He could hear a lion roaring about 500 yards away, and, somewhat nearer, the grunting of a hippopotamus.

"Being exhausted I more or less lost consciousness for perhaps half an hour or so. Nothing short of a hippo charging could have made me climb a tree. Am afraid life had little to offer about that time."

Whilst lying here Lieut. Garrood "had the annoying experience of surveying two large baboons, the size of a small man, quarrelling over my trousers, now in threads, and among the tops of 40 ft. trees."

It was not until he had passed another horrible day and equally terrible night in the bush that he at last was picked up by some natives. "Their eyes seldom left me," he adds. "Undoubtedly I was a strange sight—my legs bare and bleeding, my short vest sodden, dirty and torn, no trousers of course, just a dirty sun helmet, a short stick in my right hand, and with four days' growth of beard on my dirty face."

Back from Germany.

AT a prize distribution at the Sir William Perkins School, Chertsey, on July 24th, Sir John Brunner said he had recently welcomed home his grandson, who had been a prisoner in Germany 18 months. A lieutenant in the R.F.C., he had made six attempts to escape, and on the sixth occasion succeeded. With a companion Capt. A. J. Evans, well known in the cricket world, he had a journey occupying 17 days, for the last six days of which they lived on a score of raw potatoes each. Both officers had since been received by the King.

SIDE-WINDS.

IN 1914 the general cry was for "Business as usual," and this has been carried out so far as the growing needs of the Army for more, and still more, men has permitted. Nerves are things hostile aircraft specially aim their bombs at when they pay us a visit. Our nerves are, it is true, quite well up to date, but nevertheless they need a stimulant in the shape of the usual summer holiday. Let us then proclaim "Holidays as usual," and seek the bracing shores of the East coast in spite of the fact that that coast is on the high-road over which travels "frightfulness." Peace conditions still reign at Clacton, and a postcard to Ernest Johnson, of Station Road, Clacton-on-Sea, will bring full particulars of hotels and boarding houses.

The sun still shines,
The breezes blow;
The birds still sing,
And roses grow—
The silvery waves ebb to and fro—
Just as before the war.

Hey, then, for Clacton; there are those who will carry on during our brief spell and follow us when we return.

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How Barimar scientific welding experts are helping at the Front is well shown in a letter recently received by Mr. C. W. Brett, the managing-director, at 10, Poland Street, W. Writing from France, Mr. Cyril Rose says: "We have received the crankcase. I must say you have made a really splendid job of it, and you were on time. I shall have to show it to a certain gentleman who saw the original damage, and remarked that it would be 'quite impossible to get a welded repair.' Many thanks for the kindly interest you have taken." So considerable is the impression made by the efficiency of the Barimar system, that the firm has recently been pressed to open a branch in another country.

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ONE of the most important sides of the running of a modern works is the costing department, and more and more attention is being devoted to the subject by keen business-men. One of the most popular and effective systems is that which has been evolved by Mr. A. H. Gledhill, whose name is well known in connection with the Gledhill-Brook Time Recorders and other necessary accessories of an up-to-date factory. He has written a little book entitled "Practical Costing," which explains the system in detail. It is impossible to give even an outline of the scheme here, but it may be stated that its aim is to set forth the maximum of detail information with a minimum of labour. As Mr. Gledhill points out, a costing system to be really efficient should be based on the largest possible subdivision of the machine or article to be costed, and a carefully drawn up schedule of operations prepared so that each unit will always follow the same sequence of operations; then when another batch comes through the costs may be checked as each unit is completed, and the management may be supplied with information immediately on the completion of each part, as to whether that unit has cost more or less than previously, without having to wait until the whole machine or batch of machines is completed. The book, which will well repay study by every business-man, as it is full of practical illustrations, can be obtained from Gledhill-Brook Time Recorders, Ltd., 26, Victoria Street, Westminster, S.W.1, at 3s. post free.

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MANY and varied and successful have been the efforts of the Arrol-Johnston Works to aid local war funds, and on July 21st a sports meeting, organised by the recently inaugurated A.-J. Cadet Corps, was held at Nunholm, Dumfries. By way of a prelude, a fancy dress procession, headed by the Town Band and the pipes of the Cadet Corps, went through the streets, and drew a considerable crowd to the sports ground. Fine weather prevailed, and the various events were keenly contested. At the conclusion of the competitions the prizes were distributed by Mrs. T. C. Pullinger, wife of the managing-director, to whom a vote of thanks was heartily passed on the call of Mr. W. Lowe, commercial. He, with the departmental managers, Mr. J. Moore and Mr. R. Jack, gave valuable assistance to the officers of the Cadet Corps in the organisation of the events. The prize-winners were:—

100 yards (cadets under 16): 1. Kerr; 2. M'Naught; 3. Smith.

100 yards (cadets over 16): 1. Matthews; 2. Paton; 3. Bryden.

100 yards (open): Fulton.

220 yards hurdle race: 1. Grant; 2. Kerr; 3. Smith.

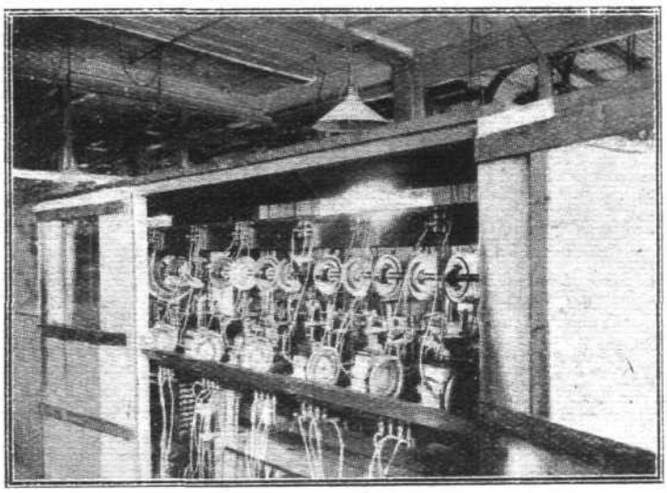
Sack race: 1. Heron; 2. Trotter; 3. Smith.

Odd boot race: 1. Raffel; 2. Thompson; 3. Bell.

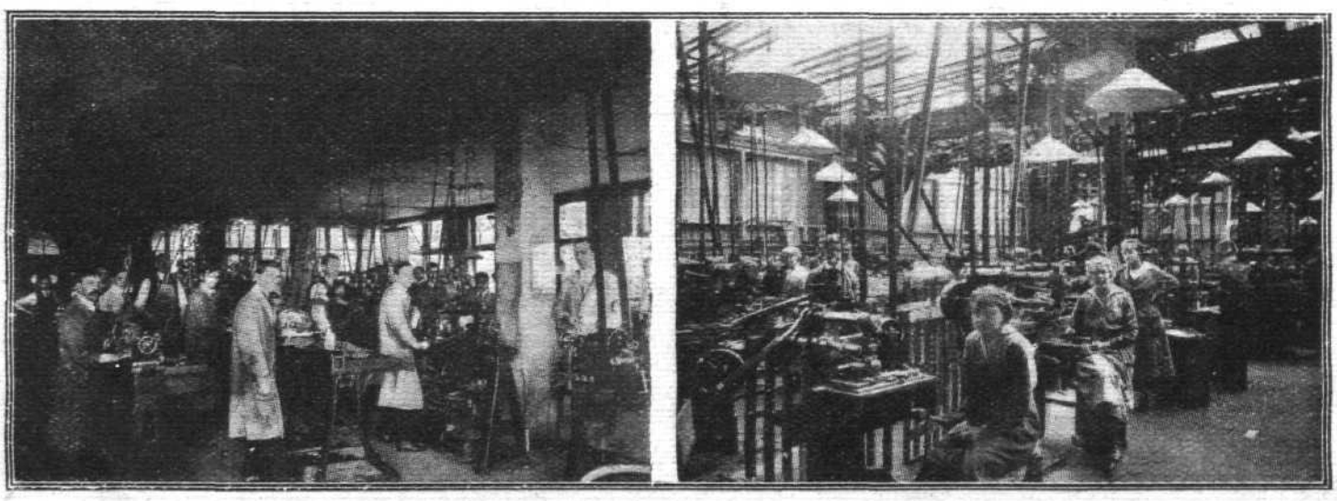
Tilting the bucket: 1. Marchbank and Trotter; 2. Halliday and Lawson.

Half-mile: 1. Raffel; 2. Grant.

Tug-of-war: Plant No. 1 beat Plant No. 2.



Another snap in the factory of the British Lighting and Ignition Co., Ltd.—One of the test benches, showing a batch of Blic magnetos undergoing their tests.



AT THE BLIC WORKS.—A couple of snaps in the works of the British Lighting and Ignition Co., Ltd. On the left, making the distributor slip-rings, &c., for Blic magnetos; and on the right, "dilution of labour," some of the girls in charge of the heavy milling machines.

Tug-of-war (ladies): Misses Halliday, Gordon, Steel, Kennedy, Whitelaw, Crampton, Lawson, Geddes.

100 yards girls' handicap: Miss Taylor.

Cycle parade—Gentlemen: Mr. Holloway as "Harry Tate." Ladies: Miss Thomson as Indian Squaw.

Medals for shooting competition: 1. Piper Edgar; 2. Sergt. Wishart; 3. 2nd Lieut. Kirkpatrick; 4. Bugler Cruickshanks.

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THE latest stock list from Messrs. Hays, Hunter and Standen, Ltd., of 110, Cannon Street, London, E.C., shows that they have on hand a useful lot of high-speed and carbon steel drills, all highest grade British and American manufacture, together with a small quantity of hacksaw blades, spanners, taps, bolts and nuts, &c. The list gives the sizes and the quantity available of each, and it is expedient that those wanting any tools and sundries such as these should lose no time in securing them, as they are quickly snapped up. The firm will be pleased to send these circulars regularly to anyone interested if they will ask for their name to be placed on the mailing list, and they are at all times prepared to quote for other items which may not appear in the lists.

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IT is announced by the directors of the British Petroleum Co., Ltd., and the Homelight Oil Co., Ltd., that the whole of the issued share capital of these companies have been purchased by the Anglo-Persian Oil Co., Ltd., and that no other company or persons have now any interest direct or indirect in the management or control. In the Anglo-Persian Oil Co., Ltd., His Majesty's Government holds a controlling interest, the balance of the capital being entirely in British hands, consequently the British Petroleum Co. and the Homelight Oil Co. will be absolutely free from all foreign influence. There will be no alteration in the conduct or management, which will be carried on under the control of the new board with the present officials and staffs of the companies, all of whom are British. National interests have made it necessary for these companies to curtail their business for the time being, but it is intended to resume with increased activity the full business of the companies as soon as normal conditions prevail.

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IN these times of difficulties with regard to deliveries, it is a great thing to be able to obtain machine tool fittings from stock. The Coats Machine Tool Co., Ltd., of Palace Chambers, Bridge Street, Westminster, S.W. 1, are in the happy position of being able to deliver at once Murchey Die Heads of the self-opening type, specially suitable for aeroplane fittings. To anyone interested they will be pleased to send a catalogue on request.

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WITH the permission of the Director of Aircraft Supplies the annual outing of the London employees of the British Caudron Co., Ltd., took place on July 11th, the party going from Richmond to Chertsey on the steam launch "Viscount." During the trip on the river on a perfect summer morning a continuous musical programme was carried out. Luncheon was served on arrival at the "Cricketers' Hotel," after which thanks were returned to the management for their interest and support. The inner man refreshed, there was a programme of sports, including many exciting and strenuous events. Among the prizes were two propeller clocks given by Mr. A. M. Ramsay (the general manager), who was present during the afternoon, as also was the London manager, Mr. R. H. Simpkin, and the company's secretary, Mr. H. C. Bathurst. Mr. Hagens, of the British Anzani Engine Co., Ltd., and Mr. R. Gliksten, of the Stanley Aviation Co., were also guests. Tea was taken prior to leaving Chertsey on the journey by river back to Richmond after a most enjoyable day.



The very important trophy which was presented by the Triplex Safety Glass Co. for competition for the One Mile Flat Race at the Aircraft Workers' Sports at Stamford Bridge on July 21st. This magnificent "pot," which was supplied by the Goldsmiths and Silversmiths Company, was an outstanding feature at the display of the prizes.

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R.N.A.S. Work.

THE following announcement was issued by the Admiralty on July 30th:—

"During the night of the 28th inst. bombing raids were carried out by the R.N.A.S. on works at Bruges, and in the areas of Thourout, Middelkerke and Ghistelles. Several tons of bombs were dropped with good results, numerous explosions being caused. All machines and pilots returned safely."

Another Bombardment of Zeebrugge.

ACCORDING to correspondents on the Belgian-Dutch frontier Zeebrugge was bombed during the nights of July 22nd, 23rd and 24th. An aeroplane shed and a petrol store were set on fire, the flare of the latter being seen from Walcheren Island. The submarine base was severely punished, and a shed probably containing a U-boat was blown up.

The Kite Balloons at Work.

DEALING with the activity of the British in Flanders the *Vossische Zeitung* says: "No fewer than 40 captive balloons were on observation duty yesterday. This fact and the fierce air combats lead us to the conclusion that the day is imminent when the infantry battle will begin in decisive fashion."

With the Italians on the Carso.

"I THINK the Austrians suspected something yesterday morning, since they always show themselves nervous when things are quiet," says Mr. Perceval Gibbon, writing to the *Daily Telegraph* on July 16th. "At any rate, they opened a lively day of fighting by sending a large squadron of aeroplanes to investigate our arrangements on the Carso, and the first guns of the day were those which drove them off. The second guns of the day, however, gave them the information which they sought, for they initiated a bombardment upon the central stretch of enemy lines on the Carso, which culminated in a neat and successful infantry attack in the evening. The bombardment was the kind of thing of which Cadorna is master. Far north of the Carso positions marked for attack the guns were smearing Biglia and Bodrez, on the Upper Isonzo, with high explosive, and the enemy trenches beyond Canale and down to Morsiko were taken under fire. At the same time, powerful and numerous air squadrons were sailing low over the roads east of Sepo, driving the Austrians out of the air, bombarding the roads and moving troops. It was confusion manufactured by the Italians as a mask for their definite purpose."

Flax for Aeroplane Fabric.

IT is gratifying to hear, on the authority of Capt. George Poe, presiding at the half-yearly meeting of the Provincial Bank of Ireland, that a good crop of flax is promised. To the same authority is also ascribed the statement that, at the present time, aeroplane cloth can only be made in Ireland.

An Old Device Newly Adapted.

THE *Journal* reports that the Germans are employing a new method to hinder the work of the Allied aircraft service. They oppose to the attacking aeroplanes a barrage fire forming a vertical wall of steel 300 yards high, and form smoke clouds to hinder the observation aeroplanes.

AERONAUTICAL SOCIETY OF GREAT BRITAIN.

THE following have been elected Members of the Society in the various grades:—

Associate Fellows.—William Herbert Hatfield, D.Sc.; Edgar Alfred Allcutt, A.M.I.C.E., M.Sc., A.M.I.M.E.; Samuel Turner; Ivan Owen Williams, B.Sc., A.M.I.C.E.; Henry Edgar Broadsmith.

Members.—Frank Bernard Harford, Capt. R.F.C.; Albert Edward Banett; Carleton George Chapman, Capt. Aviation Service, U.S.A. Army.

Associate Members.—William E. Catesby; William Stevenson Storie; Arthur W. Cutbill; C. H. Wallis.

Student Members.—Charles Watson Hall; Laurence Dove; Edwin H. Moyes; George Isaac Price.

W. BARNARD FARADAY, Secretary.

Pressing the Demand for One Air Service.

AT a meeting of the United Club, held at the Junior Constitutional Club, after an address by Mr. Joynson-Hicks, M.P., the members passed the following resolution: "That this meeting strongly advocates a speedy and large increase in the production of high-power aeroplanes and the constitution of a unified air service."

"One uniform and one badge" should be added to "one service."

It's an Ill Wind, &c.

WHEN the claim in respect of the Great Central Hotel was before the War Losses Commission, it was stated that the Zeppelin menace had a most extraordinary effect upon the takings in 1916. When a Zeppelin was brought down at Cuffley and the next at Potter's Bar there was almost a rush to the hotel, with a corresponding increase in profits.

A Third Aeroplane from the Gold Coast.

THE Government of the Gold Coast have received a further sum of £1,500, subscribed by the Chiefs of Ashanti, for the purchase of a third aeroplane for presentation to the R.F.C.

Colonel Roosevelt's Son Coming.

MESSAGES from New York state that Mr. Quentin Roosevelt, who some time ago went to a Canadian school to learn flying, is included in the contingent of American pilots who are coming to Europe.

U.S. Spruce Workers on Strike.

IT is announced from New York that the organisation known as the Industrial Workers of the World have closed down all the spruce mills of Wisconsin and Minnesota. It is believed that this has been brought about by German money. The Government is expected to take strong action, as spruce is essential for the building of aeroplanes.

To Drop Bombs on Berlin.

REMEMBRANCE of some of his American friends who were lost in the "Lusitania" has caused a German-American chemist, Mr. Segmond Saxe, to offer a reward of $1,000, in the form of a Liberty Bond, for the first American aviator to drop bombs over Berlin. Mr. Saxe wishes that his contribution might form the nucleus of a fund which the Aero Club of America might establish for the same purpose. He says:—

"My thought is to avenge my friends. Sherman said that war was hell. Well, let us give them all the hell we can and as quick as we can. It is the quickest way to end this war. Let the Prussians have a taste of their own wicked methods. It is the only way to bring home to them the horror of their acts. The raids on London were barbarities. The only way to stop them is to fight Germany with her own weapons."

America's Air Route to Germany.

INTERVIEWED with regard to the recent vote of £128,000,000 for aviation, Brigadier-General Squire, Chief of the U.S. Army Signal Corps, says that it is the determination of the Allied Governments "to enter Germany by the air route" and that the United States proposes to take part in this programme to the utmost of its ability.

In urging general co-operation to cover with secrecy the plans which are being worked out, so as to prevent counter-measures by the Germans, he said: "Of course the public wants to know what we are going to do with the 640 millions of dollars (£128,000,000) appropriated by Congress for air service. It is safe to say that we shall spend that money and probably much more on the air route into Germany—that's about all we are going to say." According to the *Daily Telegraph* correspondent in New York, thousands of factories have been requisitioned to make aeroplane parts, and the above-mentioned vote is only the forerunner of another grant equally big.

COMPANY MATTERS.

NEW ISSUE.

Peter Hooker, Ltd.

LLOYD'S BANK is authorised by the purchasers of the shares to offer for sale 250,000 7 per cent. cumulative participating first preference shares of £1 each, at 1s. 6d. premium, in Peter Hooker, Ltd., which carries on the business of manufacturing engineers and makes the Gnome and Le Rhone aviation engines and Newall gauge. The company has a capital of £450,000 divided into 250,000 7 per cent. cumulative participating first preference shares, 50,000 second preference shares and 150,000 ordinary shares, all of £1 each. The dividend on the first preference—that is, those now offered for sale—will be paid free of income tax up to 5s. in the £, and these shares will participate in 25 per cent. of the surplus profits distributed among the shareholders up to a further 5 per cent., but the additional dividend will be subject to tax. The prospectus states that the company was formed in 1900, and the entire ordinary share capital is held or controlled by the Aircraft Manufacturing Co. and Mr. G. Holt Thomas, chairman and managing-director. The board of directors is a practical one, and, in addition to Mr. Holt Thomas, consists of Mr. A. F. Thomas, Mr. Hugh Burroughes (the general manager of the Aircraft Manufacturing Co., Ltd.), and Mr. G. A. Peck (assistant general manager to the same company). The company owns freehold land and buildings at Walthamstow, covering an area of over 26 acres, and since the outbreak of war £300,000 has been spent upon land, buildings, plant and machinery. The turnover for the 10 months ended May 31st last amounted to £508,640 (or at the rate of £610,368 per annum). The engineering works, fixed plant and fixtures, loose plant, tools and utensils have been valued at £405,405. The company has outstanding mortgages and debentures for £114,750, including £50,000 of "C" debentures held as collateral security for a debt which it is intended to repay out of the proceeds of the present issue. The present issue has been sanctioned by the Treasury, and the list of applications will close on or before August 11th. The prospectus of the issue appears on page 17 of the supplement in front.

NEW COMPANIES REGISTERED.

AERAC, LTD., 7, Finsbury Square, E.C.—Capital £1,000, in 10s. shares. Aircraft, motor car engine manufacturers, and dealers in components.

AERO UNDERTAKINGS, LTD., 66, Piccadilly, W.—Capital £5,000, in £1 shares. Manufacturers and dealers in explosives, bullets, bombs, shells, ammunition, arms, &c. First directors, J. Pomeroy and W. M. Rolph.

BRITISH IGNITION APPARATUS ASSOCIATION, LTD, 29–34, Mansion House Chambers, E.C.—A company limited by guarantee, with not more than 50 members, each liable for £1 in the event of winding up. Objects: To promote and protect the interests of manufacturers of ignition apparatus in the United Kingdom, to conduct and assist in experiments, to promote the standardisation of quality and form of ignition apparatus and the adoption of equitable forms of contracts, &c. The first members of the Governing Committee are to be appointed at the first general meeting.

Aeronautical Patents Published.

Applied for in 1916.

The numbers in brackets are those under which the Specifications are printed and abridged, &c.

Published August 2nd, 1917.

10,019. F. W. CHAPMAN. Jointing clip or socket for aeroplanes. (107,662.)
10,487. R. F. POWER. Control of aeroplanes. (107,674.)

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